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SPENCER W. ROBINSON, EDITOR

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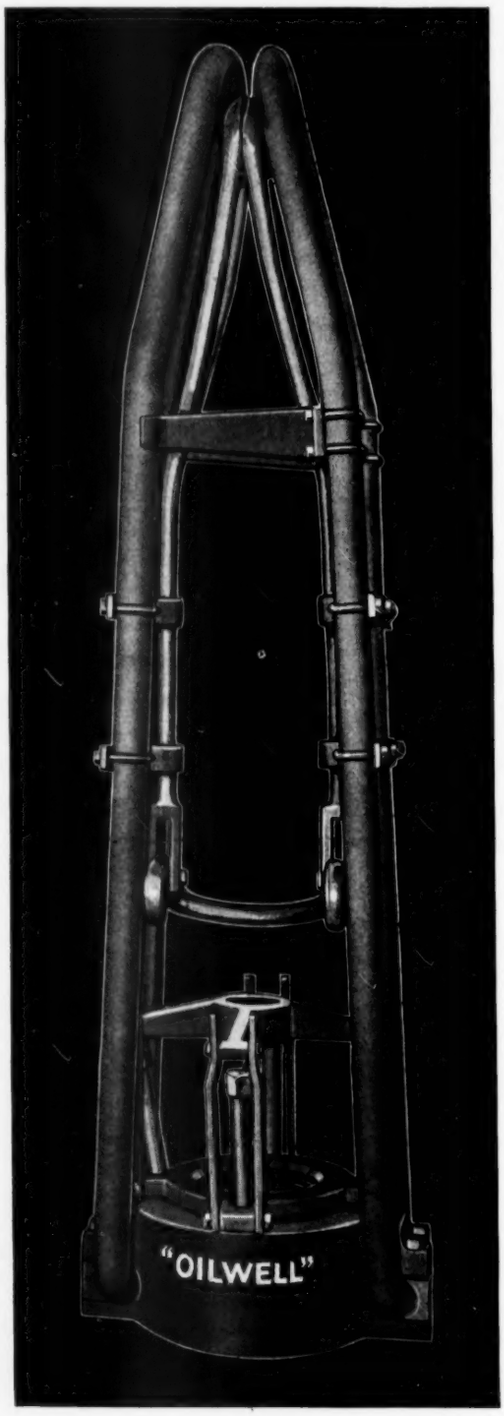

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XUM

Thirty Million Barrel Crude Stock Increase This Year

Demand exceeding expectations but supply outlook presents discouraging picture

By H. J. STRUTH
Staff Economist

NO ONE can deny that the petroleum industry has been and is enjoying prosperity through the advent of an unprecedented demand at materially improved market values. Notwitstanding the fact that overproduction, particularly in California, has again pervaded the ranks of the producing branch of the industry, the demand for petroleum and its products continues at record high levels. On the other hand, it is not difficult to foresee complications ahead that are bound to create an unfavorable situation so far as the supply of crude is concerned. Continued increases in production during recent months have resulted in a total output of crude during the first half of this year amounting to approximately 488 million barrels. In fact, results for the first five months of this year indicate that the total supply, production, plus imports, has exceeded the record-breaking demand by more than 22 million barrels. The fact that the daily average production of crude is now more than 2,900,000 barrels suggests that there will be produced during the last half of this year at least 502 million barrels, or a total output for the year of 990 million barrels. This quantity plus foreign importation of, probably, 100 million barrels, indicates a supply of 1,090,000,000 barrels. Since demand is not expected to exceed 1,060,000,000 barrels, it is apparent that at least 30 million barrels of crude will be added to storage in the United States by the end of this year.

The situation outlined above presents a rather discouraging picture, but readers will no doubt recall that the writer pointed out in the February 22 issue that the record demand this year would not absorb the indicated crude supply. Even at that early date it was apparent that the supply of crude would considerably exceed what appeared to be a billion barrel demand. Subsequent results, however, have indicated that the demand will aggregate 1,060,000,000 barrels, which, if fully realized at that time, would have prompted the conclusion that demand would equal this year's supply. However, the lifting of proration effort in California, coupled with similar action in other flush areas, has boosted the output of crude to levels that have exceeded even the most disparaging view that earlier indications imparted. Thus, it is apparent that even though California production exhibits declining tendencies, as expected in the near future, the national daily

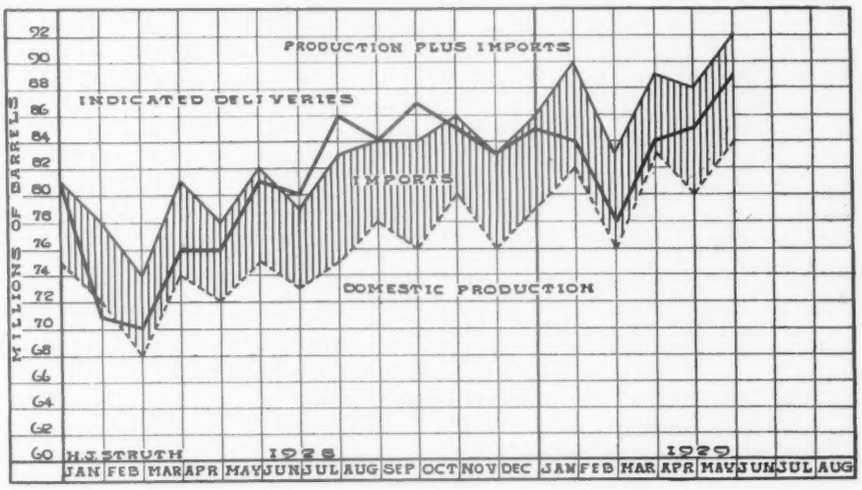


FIGURE 1—*Crude Supply and Demand. Lower dotted line denotes domestic crude production—top solid line, production plus imports. Ribbed area represents crude imports. Solid curve denotes demand*

average production during the last half of this year will not fall below 2,750,000 barrels. This figure is predicated upon the assumption that California production will show a sizeable decline during the latter part of this year and Oklahoma's newer areas will not prove up to earlier anticipations. In the meanwhile the industry must continue to contend with a large volume of imported crude as well, which will offset an otherwise healthy demand for domestic crude by the refining branch of the industry.

Imports-Exports

In consideration of the stand being taken on the advisability of placing a tariff on foreign crude imported into the United States, it is well to point out that while imports are now at the rate of 100,000,000 barrels for this year, exports of both crude and refined products will probably aggregate 150,000,000 barrels during 1929. This means that one and a half times the equivalent of crude imports represents foreign business for the American marketer of petroleum and its products. While it is literally a fact that current demand exceeds the domestic production of crude, and importation of foreign crude is responsible for present excessive supplies, it must be conceded that a stoppage of imported crude would necessarily be reflected in a corresponding decline in exports of refined oils. Thus, while the immediate effect of a tariff on imported crude would imply that the current supply would be reduced appreciably, the ultimate result would be a decline in foreign demand for Aemrican petroleum products, which, in the long run, would not benefit the industry. The crude supply and demand situation is graphically illustrated in Figure 1, which shows domestic production, production plus imports and indicated delivereies of crude petroleum on a monthly basis from January 1928 to June 1, 1929. It will be noted in this chart that delieveries have exceeded domestic production for some time, and it is now apparent that the demand for crude during the last half of this year will show further material improvement. It appears as though the only solution to the present unwieldy supply situation is for American producers to reinstate proration on a sound basis and endeavor to keep the domestic supply below the point where imports can exert an unfavorable influence. That, to the writer's mind, would prove more logical than to inaugurate a tariff on imported crude.

Detail Field Statistics for First Six Months of 1929 Begins on Page 111.

Excess Supply

According to the monthly report of the Bureau of Mines for May, the excess supply of crude for the first five months

of this year aggregated approximately 22,561,000 barrels, as compared with 19,015,000 barrels for the same period of last year. The figures reveal that the crude supply during this period aggregated 441,973,000 barrels, while demand aggregated 419,412,000 barrels. Last year, during the same period, supply aggregated 394,490,000 barrels, while demand was 375,475,000 barrels. In the accompanying chart, Figure 2, it is shown that demand has increased materially over last year, while supply, production plus imports, has practically equalled the gain exhibited by this unusually large increased demand. From these facts, it is apparent that overproduction has reached a stage where it is practically hopeless for the industry to bring about any improvement this year that would aid in appreciably reducing the excessive supply. As a matter of fact, it is up to the industry now to exercise extreme precaution in order to prevent the piling up of even greater excessive supplies than has been indicated above.

Complex Price Situation

A study of the general crude market reveals a rather complex situation. For the most part, price increases have been sustained by reason of an unusually large demand. In fact, only the discouraging outlook imparted by California has prevented further increases, particularly throughout the Mid - Continent area. On the other hand, it can be said that the underlying strength of the general crude market has also exerted a favorable influence upon the California market. In other words, while the California crude situation has prevented the posting of

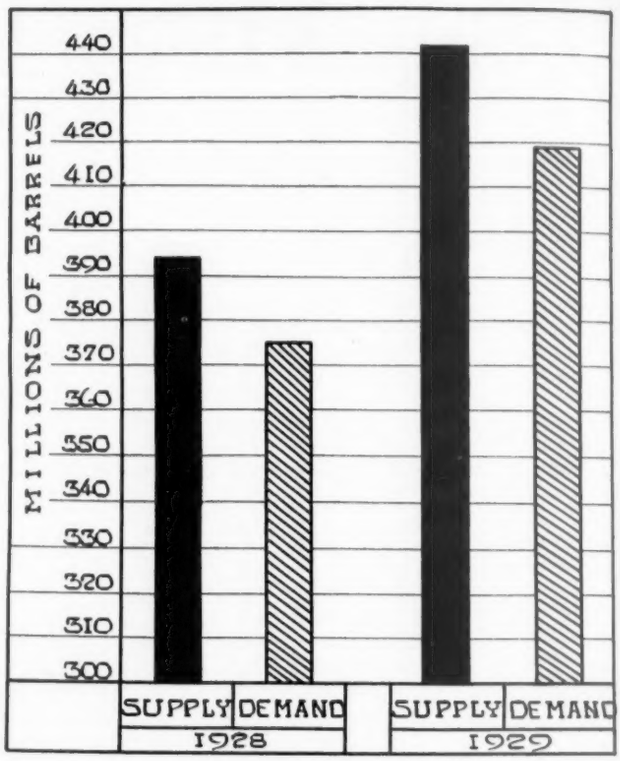


FIGURE 2
Crude Supply and Demand Status for First Five Months of 1929 *and* 1928. *Solid Bars—Supply, production, plus imports. Ribbed Bars Demand, consumption, plus exports*

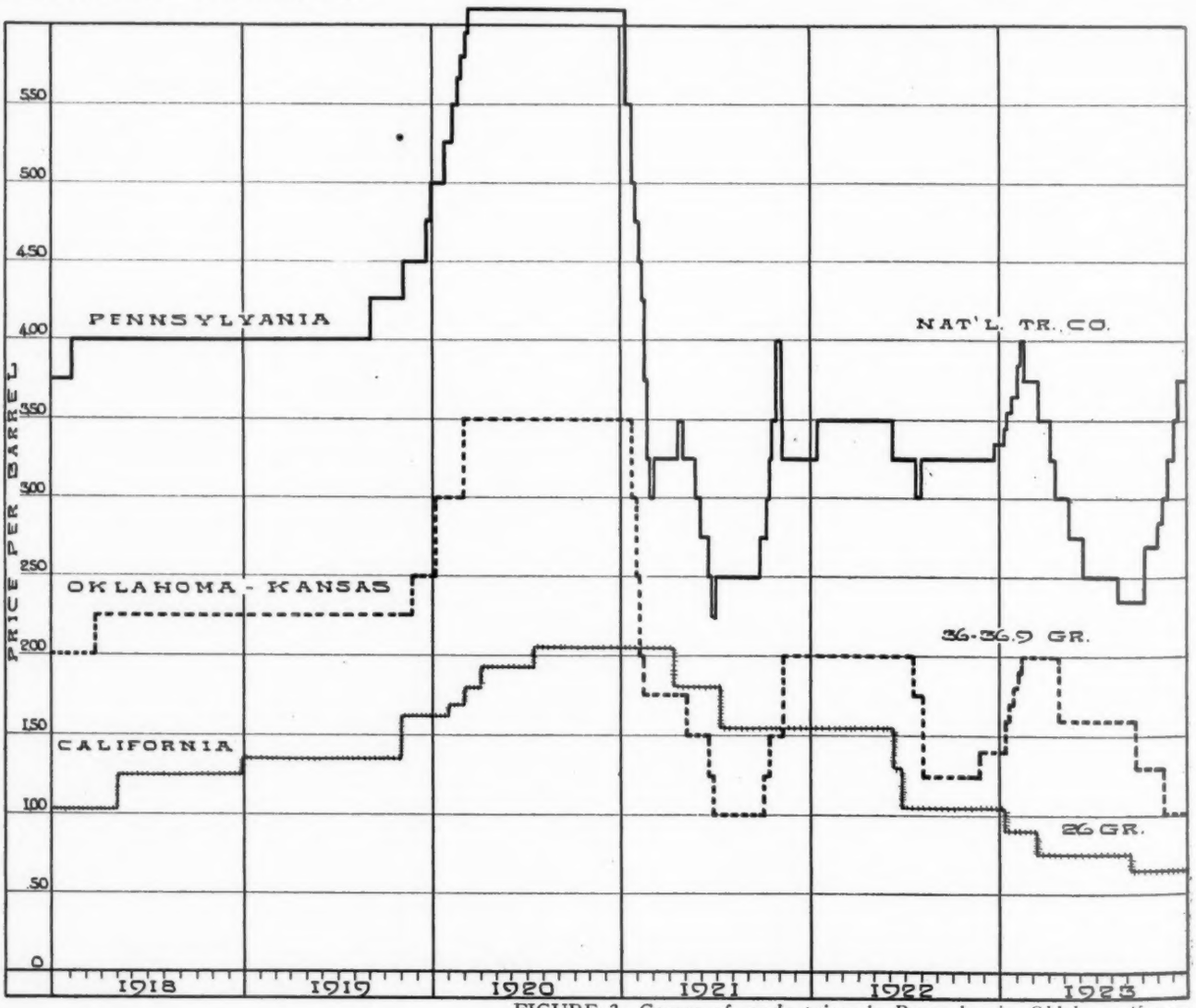


FIGURE 3—*Course of crude prices in Pennsylvania, Oklahoma-Kansas,*

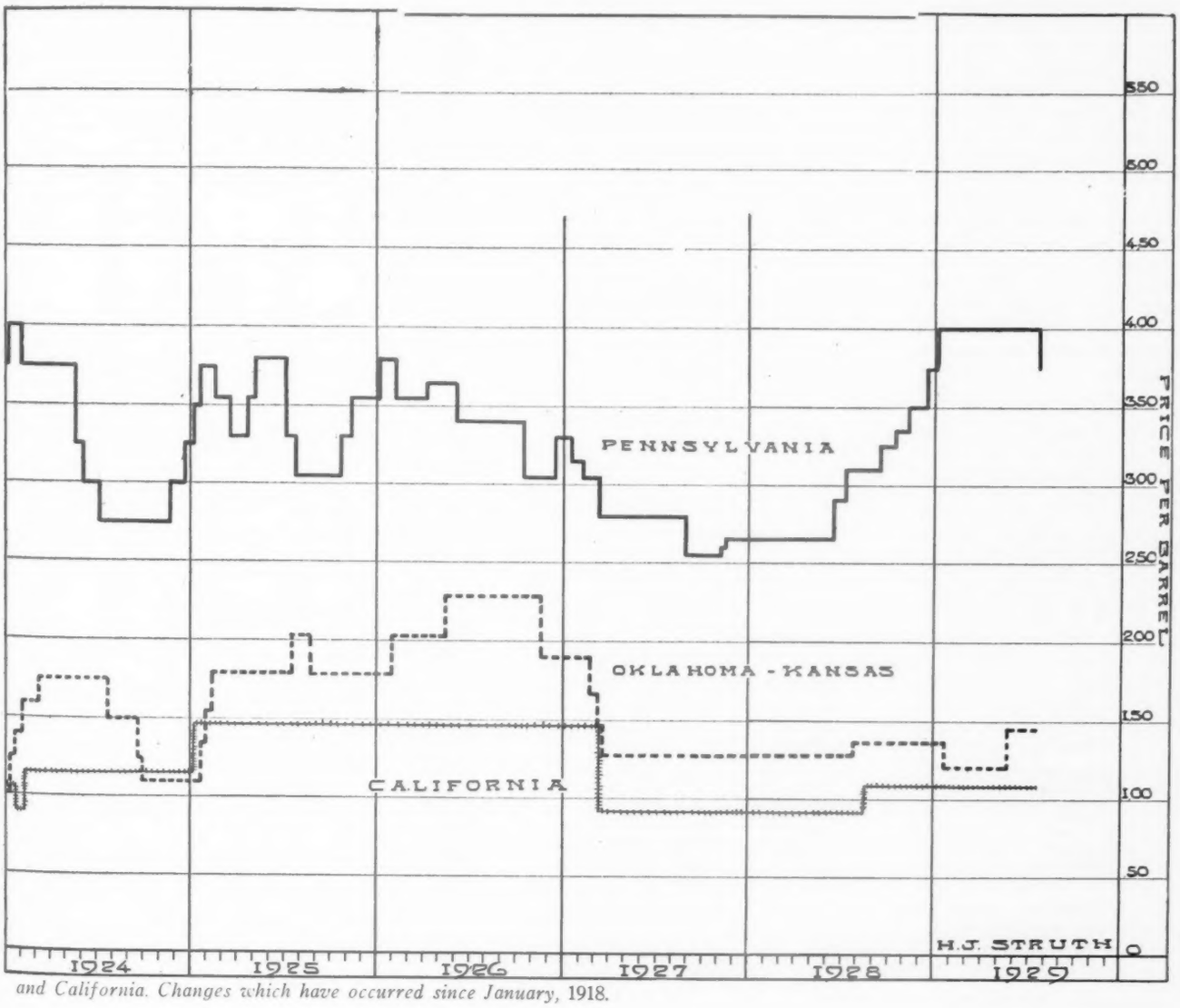
additional price increases in the Mid-Continent, the situation in the Mid-Continent fileds has, at the same time, also prevented an otherwise justified reduction in California crude prices. Thus, it is now apparent that any recession in crude production in California will impart much needed strength to the market there, as well as exerting a more favorable influence upon the general crude market. The recent reduction announced in Pennsylvania was not at all surprising, for it has been previously pointed out by the writer that successive advances posted for those grades were somewhat overdone. It is, in fact, surprising that prices of Pennsylvania crude were maintained for so long a time. These reductions were justified and do not reflect unfavorably upon the general crude markets of the United States. As a matter of fact, it would not be surprising to learn of further reductions there. Figure 3 presents a graphic history of the price movements of Pennsylvania, Oklahoma-Kansas, and California crudes.

While it is apparent that the general crude market will remain firm during the next 30 to 45 days, the outlook following the season of peak demand suggests the possibility of a generally lower crude market. Since it is not anticipated that production will recede to the point where present excesses will be eliminated reductions may be expected to be announced this fall. The fact remains, however, that the industry will have profited by having sold the bulk of this year's demand at favorable prices, insuring a year of greatly increased net profits. This, however, will not obiviate the necessity for concerted action to prevent overproduction, as such action is imperative if the industry expects to enjoy prosperity next year. The prospect of adding at least 30 million barrels of crude to storage this year offers a serious handicap with which to enter 1930 and prompts serious thought and action. This is particularly true of the California situation where supply during the first five months of this year exceeded demand by about 14,000,000 barrels.

Demand for Rest of Year

Some idea of the prospective demand for crude throughout the balance of this year to stabilize the supply of refined shows the monthly refinery crude requirements for 1929, compared with actual runs to stills for the first five months. Normally, the refinery crude demand for the first five months of this year should have aggregated 389,392,000 barrels, whereas the actual consumption amounted to 396,443,000 barrels. It will be noted that runs were somewhat curtailed during May, representing the first attempt this year to stabilize the supply of refined products with demand. Undoubtedly, further effort will be made in this direction. It is apparent, however, that this year's refinery crude demand will aggregate 995,000,000 barrels, with the possibility of reaching a maximum monthly demand during August of more than 89 million barrels. Estimates for the last half of this year reveal that the daily average refinery crude demand will aggregate 2,841,000 barrels, thus insuring a continuation of the healthy demand exhibited recently.

Tables showing United States field operations for the first six months of this year, which appear on page 111, reveal that drilling operations were decidedly greater than during the same period of last year. The number of wells completed during this period aggregated 10,438, as compared with 8,918 last year. Similarly, the quantity of new production obtained showed a considerable increase over last year, mounting from 2,496,146 barrels during the first half of last year to 3,745,410 barrels during the first half of this year. Greater success accompanied drilling



and California. Changes which have occurred since January, 1918.

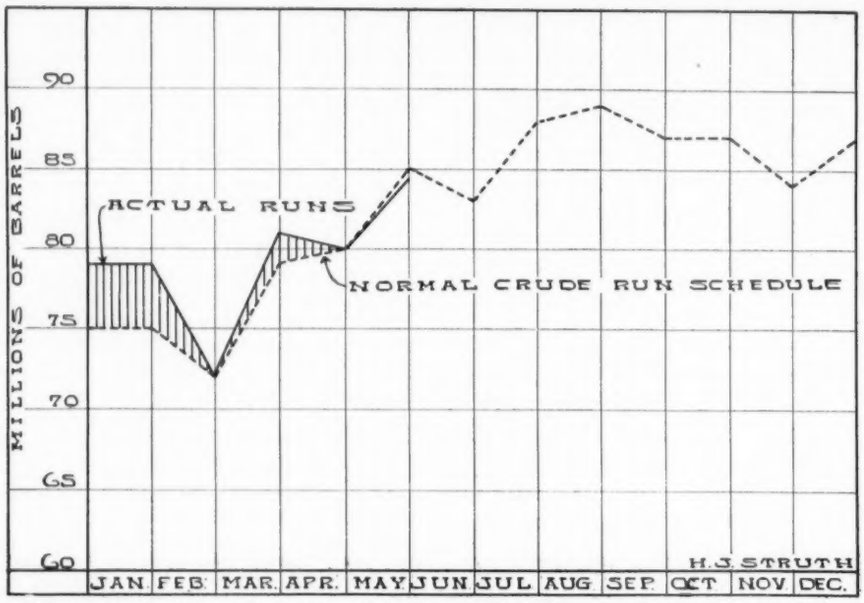


FIGURE 4—*Refinery Crude Run Schedule, 1929. Shows normal course of refinery crude runs compared with actual runs to June 1, 1929*

this year, both in respect to the number of failures obtained and the quantity of new production obtained from producing wells. Dry holes drilled amounted to 3,257 or about 31 per cent. this year, as compared with 2,937 or about 33 per cent. last year. At the same time, the quantity of new production averaged 646 barrels per well this year, compared with an average of 530 barrels per well last year. Texas contributed the largest quantity of new production, 2,225,657 barrels, a gain of 536,551 barrels over the same period of last year. Eastern states furnished the largest number of completions, as well as the largest number of producing wells completed. California led all states in the amount of oil produced during the first six months of this year, with an aggregate of 141,054,450 barrels, a gain of 27,689,250 barrels over the same period of last year.

Wildcatting Less Successful

Wildcatting, while more pronounced was not so successful, as only 37 producing oil wells were completed during the six months period out of 408 wildcats drilled in the United States. This activity was productive of 12,585 barrels of new production, 7,442 barrels of which was contributed by the state of Texas. Texas led all states in the number of wildcat wells completed, as well as in the quantity of oil obtained therefrom.

The Eastern states exhibited considerable drilling activity during the first six months of this year. Ohio County, Kentucky, contributed 241 wells, of which 176 were oil wells having an initial output of 9,061 barrels. The state of Kentucky furnished 14,443 barrels of new production. Muskegon County, Michigan, proved most active during the first half of this year, contributing many fairly large wells. This county furnished 216 completions, of which 157 were oil wells, having an aggregate initial production of 68,716 barrels, while the entire state of Michigan furnished 246 completions, of which 166 were oil wells with an initial of 72,064 barrels. In Mississippi, drilling operations resulted in the completion of 9 dry holes in various sections, no oil production being obtained.

Kansas and Oklahoma

Sedgwick County, Kansas, was the scene of considerable activity during the first half of this year, contributing 87 completions, of which 54 were oil producers having an initial production of 39,695 barrels. In Oklahoma, Pottawatomie and Creek Counties furnished considerable activity which resulted in the completion of 281 wells in Pottawatomie and 156 in Creek. These counties contributed new production in the amounts of 194,316 barrels and 6,609 barrels, respectively. Seminole continued to furnish an incentive to drill during the first half of this year, although new production showed a decided decline. The number of completions there aggregated 323, of which 233 were oil producers, with an initial production of 175,955 barrels. This compares with an initial of 635,948 barrels during the same period of last year, when only 172 oil wells were completed. Considerable gains were recorded in new production in Logan, Oklahoma, Payne, Pontotoc and Pottawatomie counties, while most other sections of the state showed marked declines. The quantity of production obtained during the first six months in Oklahoma aggregated 121,432,370 barrels, as compared with 115,632,450 barrels last year. Most of this gain was the result of lifting proration measures in compliance with the larger demand from crude.

California showed a considerable increase in drilling as well as a large gain in new production. Gains were recorded in new production by Elwood, Fruitvale, Santa Fe Springs, Santa Barbara, Huntington Beach, Inglewood, Poso Creek and Seal Beach. Santa Fe Springs showed the largest gain which amounted to 611,862 barrels for the period. Last year this field only contributed 225 barrels of new production, while this year the total amounted to 612,087 barrels. Declines were recorded by Rosecrans, Brea Olinda, Cat Canyon, Kern Front, Long Beach, Richfield, Rincon, Round Mountain and Ventura. The activity at Santa Fe Springs was responsible for boosting the production of the state by about 28 million barrels during the first six months of this year.

Flush Greatest in Texas

Texas furnished the largest quantiy of new production in the country, showing a net gain over the first six months of last year amounting to 535,551 barrels. Gray County, in the Panhandle, increased its total production from 3,548,650 barrels last year to 5,355,550 barrels this year. This was due to increased drilling activity which resulted in the completion of 88 wells, of which 75 were oil producers, contributing an aggregate initial production of 82,045 barrels. Hutchinson County production declined from 7,920,500 barrels last year to 4,678,300 barrels this year.

U. S. Comparative Production for First Six Months 1927, 1928 and 1929*

State—	Production First Six Months 1929	Production First Six Months 1928	Production(a) Total 1928	Production First Six Months 1927	Production Total 1927
Arkansas	13,382,050	16,422,150	32,295,000	21,970,090	40,005,000
California	141,054,450	113,365,200	231,982,000	116,565,250	231,196,000
Eastern States	20,251,050	19,569,000	40,662,000	19,726,750	40,448,000
Kansas	19,041,870	19,934,750	38,332,000	20,815,025	41,069,000
Louisiana	10,208,600	11,418,650	21,626,000	11,805,720	22,818,000
Mountain States	12,989,830	14,392,850	29,021,000	15,715,670	30,419,000[1]
Oklahoma	121,432,370	115,632,450	249,558,000	125,976,990	277,775,000
Texas	131,240,470	121,650,300	256,888,000	113,092,365	217,389,000
Totals	469,600,690	432,385,350	900,364,000	445,667,860	901,129,000

[a]() Preliminary figures.
(1) Includes Alaska.
*Complete field statistics for first six months of 1929, on page 111

Field Statistics for First Six Months of 1929 Compared with 1928

State	Completions		Producers		Gas Wells		Failures		Initial Production		Annual Production	
	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928
Arkansas	154	107	65	53	12	7	77	47	15,451	34,858	13,382,050	16,422,150
California	526	331	488	255	..	..	38	76	856,479	266,820	141,054,450	113,365,200
Eastern States..	3,741	2,819	2,124	1,607	835	645	782	567	107,109	44,232	20,251,050	19,569,000
Kansas	379	549	169	253	24	45	186	251	58,953	62,833	19,041,870	19,934,750
Louisiana	391	376	112	96	113	132	166	148	35,901	45,151	10,208,600	11,418,650
Mountain States	*	108	*	94	*	8	*	6	*	34,287	12,989,830	14,392,850
Oklahoma	1,651	1,754	893	819	159	260	599	675	445,866	318,865	121,432,370	115,632,450
Texas	3,596	2,874	1,947	1,525	240	183	1,409	1,167	2,225,651	1,689,100	131,240,470	121,650,300
Totals	10,438	8,918	5,798	4,702	1,383	1,280	3,257	2,937	3,745,410	2,496,146	469,600,690	432,385,350

*Not available at time of publication.

More wells were drilled in this area, 41 against 24, but settled production declined faster than the rate of new production obtained. East Central Texas production declined from 4,304,950 barrels last year to 3,617,300 barrels this year. This was mostly due to declining production in the Corsicana-Powell field which receded from 2,144,450 barrels last year to 1,550,850 barrels this year. There was an increase of 13 completions in East Central Texas during the first six months of this year, of which only 2 wells were classed as oil producers, contributing only 95 barrels of new production.

West Texas led all sections of the state in both drilling and in the quantity of new production obtained. Howard County production increased form 887,600 barrels to 7,843,000 barrels. This section contributed 114 completions against only 42 last year, of which 112 were oil wells, with an aggregate initial of 60,485 barrels. Last year this county contributed only 15,602 barrels of new production. Loving County production increased from 231,000 barrels last year to 1,008,850 barrels this year, with the completion of only 4 new wells contributing a total initial of 1,000 barrels, or an average of 250 barrels per well. Pecos County production increased from 9,118,450 barrels to 16,105,600 barrels, although the number of new wells completed declined from 104 to 53 and initial production declined from 720,655 barrels to 276,915 barrels. The increased production was due to raising of proration allowances and shows how easily production can be increased there by the mere opening of a valve. An enormous potential is indicated for this area. Winkler County showed less wells completed, with production about the same as it was last year, approximately 28 million barrels. The quantiy of initial production was also lower.

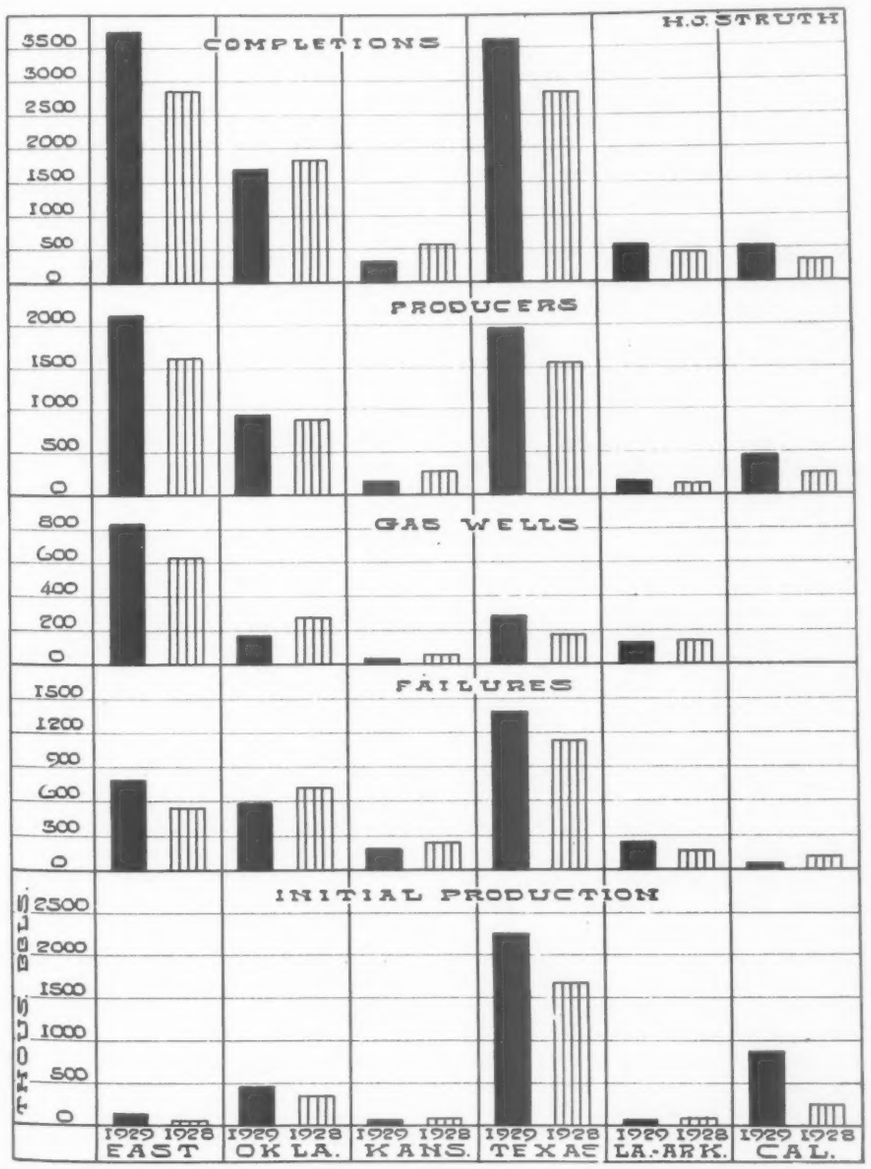


FIGURE 5—*United States field operations compared for first six months of* 1929 *and* 1928. *Completions, producers, gas wells, failures and initial production for the leading producing areas*

West Central Texas

West Central Texas production was slightly lower than last year, aggregating 9,367,500 barrels for the first six months, as compared with 9,975,700 barrels during the same period of last year. Initial production was less than half of the quantity obtained in the first six months of last year as less wells were drilled, the only exception being Coleman and Shackelford counties, where results yielded slightly more initial production through an increased number of completions. East Texas showed the greatest activity in Panola County, where 38 wells were completed against only 19 last year. However, all but five of these wells proved to be failures, the five being gas wells.

Only 23 barrels of new production was brought in throughout the entire East Texas area during the first half of this year. Of 66 wells completed in this area, only four were oil producers and three of these were in wildcat territory. The facts show that only one barrel of new production was obtained in proven territory, while the total quantity of new production only aggregated 22 barrels.

Wilbarger County, in North Texas, proved to be the most active in this area, new well completions increasing from 134 last year to 226 this year; 176 wells were oil producers with an aggregate initial of 25,388 barrels. The total production of

(Continued on page 172)

Drilling Activities To Be Less Pronounced

Survey for balance of 1929 discloses limiting factors in development outlook

IN consideration of the intense development that accompanied the first half of this year, it is of considerable interest to ascertain the probable course of drilling throughout the balance of this year. A survey of the major oil areas of the United States reveals that drilling activities will undoubtedly be less pronounced during the last half of this year. With the possible exception of California, where the outlook remains rather uncertain, it is apparent that a number of limiting factors are expected to retard oil field development.

Perhaps the most important factor that looms on the horizon is the probability that surplus oil will bring about a reduction in posted prices during the latter part of this year, removing the past incentive to develop newly discovered producing areas. At any rate, the immediate future of the industry depends primarily upon the course of production during the next 30 days, which will determine whether present posted prices will be sustained. Other important factors include unit control in West Texas, failure of certain of the newer discoveries in Oklahoma and Kansas to yield results anticipated, and the possibility of renewed efforts at proration and unit development in California. California continues to exert an unfavorable influence upon the general crude situation, with development proceeding at an excessive rate, while the industry as a whole is anxiously awaiting the prospect of a natural decline at Santa Fe Springs.

California

DRILLING in the flush areas of California during the remainder of the year apparently depends upon the effectiveness of the state law to prevent the waste of gas, the demand for crude and the amount of common sense exercised by operators, provided they are not restrained from further development of critical areas. Drilling is now proceeding with full steam ahead in two major fields and there will not be a radical reduction in operations for several months.

It seems that the industry in California will have to be acted upon by some external force before the wave of drilling is checked. State supervision of the overproduction problem, a slash in crude prices or some outside influence may be employed, but any one of these three remedies is frowned upon and any and all probably would cause confusion in the end, even though they temporarily aided the situation. The only sensible remedy to check extensive drilling lies in an agreement among the operators themselves.

With development of the O'Connell zone, Santa Fe Springs promised to pass out of the critical class, but another menace apparently lies ahead. The drilling of the O'Connell sand will be only a matter of a few months, but recent completion of a large well in the lower Clarke sand at 8006 feet portends another drilling campaign of major proportions.

Probably 50 more wells will be completed in the O'Connell zone, then this sand will enter a steady decline in drilling operations. Its area is limited and not more than 125 wells will be completed in the sand unless it shows a slower decline to the upper formations.

The lower Clarke zone is found between 7400 feet and perhaps 8200 feet, although the bottom of the sand has not been found. Probably twice as extensive as either the Buckbee or O'Connell, this zone gives the operator who missed production in the upper sands another chance. For this reason, it is believed that a large number of wells on the flank of the structure will drill for this promising deep zone.

Lower Clarke Zone

Discovered at a depth which was completely out of reach of the drill several years ago, the lower Clarke sand stands in an entirely new class. At least 50 wells will be drilled for the zone, and if most of these are successful, more than twice as many will be deepened. Producers which show a rapid decline in the O'Connell zone and are in a position to be deepened, will be continued to the lower Clarke sand. This new super-deep zone resembles the "real thing" and may be comparable to the Meyer sand.

Regardless of conservation measures, Kettleman Hills will be extensively drilled during the remainder of the year. Since one well in this field probably will be equal to three in many other districts, the drilling of 30 wells is equivalent to a much larger development campaign elsewhere. About 30 wells are now being drilled and most of these will be completed during the year. Few new wells have been started, but if general conditions improve and the first half dozen wells completed compare favorably with the discovery well, many more tests will be started. An agreement has been reached to abandon plans for drilling the middle dome of the great structure, but both the north and south domes will be drilled. Development is centering on the north dome, with only a few tests on the south dome.

With about 125 wells still drilling at Long Beach, this greatest of all California fields will see new development during the remainder of the year. New wells are starting each week and drilling is expected to taper off gradually at best. There is still the assurance that good wells may be completed, and this is enough to cause the complete development of large leases. The townlot nature of the drilling makes one well the direct cause of another, due to offsetting clauses in the leases. For this reason alone, many new wells will be drilled on leases not fully developed. The slow decline of the wells is an attraction large operators who need stable production are not overlooking.

Elwood is regarded as a flush area, although it is closely held by two companies. Present plans of these companies call for a conservative drilling program during the remainder of the year, but the entry of other companies along the tidelands may cause a sharp upturn in drilling activities.

A steady drilling program will be carried out in the Ventura field, with about 25 wells to be completed during the next six months. New locations are roughly offsetting the completions and field operations will continue at about the present pace. Completion of several large wells during the past six months, in sharp

contrast to a leaner bunch of producers during the latter part of 1928, is expected to have a favorable effect on future drilling operations.

Overproduction in the Los Angeles Basin has put a damper on drilling operations in the San Joaquin Valley and little drilling will be done in this district during 1929. Several promising areas will be developed as soon as the outlook is brighter, but such a time is not expected before 1930.

The new Santa Barbara field will be the scene of an extensive drilling campaign, but the discovery of water where oil was looked for is expected to act as a brake on operations. Nearly 50 wells have been started, but only a few more locations will be made until more is known of the producing sand.

Oklahoma

DUE to the tremendous drilling activity in the past in the Greater Seminole district, Oklahoma and Kansas will not show the large number of drilling operations during the remainder of the year that they have for the past couple of years. The number of drilling operations in flush areas of Oklahoma has declined steadily since the first few months of 1929, and prospects are that there will be little increase. In Kansas the number of operations in flush districts was high, and it is doubtful if it will reach the same high level during the rest of the year. Both states will probably show an increase in the number of wildcat tests and some of the drilling wildcats may open competitive drilling campaigns.

The St. Louis region, west of most members of the Greater Seminole group of pools, will probably see more activity than any of the state's known new producing territories. Development in this sector is already underway and is not likely to be increased to a very large extent.

Recently a number of producing wells lying north and west of St. Louis proper have been completed. These wells have opened approximately 3000 acres for development. The district is already having a big drilling campaign. Possibility of locating a Wilcox sand pool in the St. Louis district is favorable and if the field should be of any size, the campaign would immediately increase to larger proportions. The sizes of the leases in the region is very favorable toward accelerating development, in that they are for the most part very small.

Despite the fact that the Oklahoma City field is ranked as one of the state's best bets for flush production, and that 32 tentative locations have been staked, the drilling activity there will not reach such proportions as this figure would indicate. These locations will be drilled only when deemed necessary or proper. The formation is too deep and costly to reach to permit hurried development. The present tests have been spaced in the center of each 20 acres. Except along property lines, most of the wells will be permitted to drain 20 acres each.

There is always the first time for everything, but the past history of lime formation producing pools has been a big factor in limiting the amount of drilling at Oklahoma City. The intrusion of water on the discovery well is another factor.

Indian Territory Illuminating Oil Company and Foster Petroleum Company practically control the field with their large acreage holdings. The few other companies owning acreage are sufficient to cause an intensive development program.

There are a few other spots in the state, such as along the edges of the Seminole group of pools and the new field between Wewoka and Allen, that will cause some more drilling, but none of these spots apparently will have a big play.

An increase in the price of crude oil always encourages the wildcatter to get busy. The last increase had this effect, although it will be fall before any of the new wells can be completed, and by that time, indications are that the state will again be over-producing with St. Louis and Oklahoma City.

Much of the wildcat activity will be centered in two districts: western Oklahoma and the area between the Seminole group and Oklahoma City. The new Oklahoma City field is largely responsible for both of these plays.

Western Oklahoma already is seeing its greatest development campaign, with approximately 45 drilling tests. This number will be increased during the next few months. Since the formations are expected to be found quite deep, no new pool that might cause a big increase in activity is anticipated, unless some of the present deeper drilling tests should locate oil. It will require the remainder of the year for those now starting to be completed.

Drilling to be done in this region will demand the heaviest type of equipment to penetrate the upper layer of formations laying over present producing horizons that dip from the east to the west. The equipment, together with the cost of the hole, will run the expense of operations in the district to big figures. As a result, many of the independent wildcatters will be eliminated and few will take the chance of risking their all in one hole.

If a field should be opened it probably would be on one of the large core-drilled or magnetemeter blocks that have been assembled during the past three years, and the lack of competitive property lines would be influential in holding back development.

The area between Oklahoma City and Seminole offers the greatest possibilities for an intensive campaign of the wildcat districts. Acreage is for the most part divided into smaller tracts and the producing depth is not so great. With the play around Seminole, except in a few spots subsiding, this area should come into its own. A few tests have been drilled and deals are now underway for the starting of additional tests.

Kansas

KANSAS should continue during the next six months to enjoy a large exploration campaign. But due to the concentrated rush at Valley Center, Sedgwick County, during the past six months, it is possible that the number of operations may be slightly lower. A number of new wildcat producing regions have been opened, which, in addition to causing drilling in their immediate vicinities, will encourage the continuance of the wildcat exploration.

There is no question but that the drilling development in wildcat areas in both central and western Kansas will continue during the remainder of the year. A large number of drilling tests are now at interesting depths and under the law of averages some new fields should be opened.

Most of the drilling wildcats are situated on large blocks of acreage that will be conservatively developed. This fact has been holding back activity in western Kansas, where production has been found.

Texas

WILDCATTING in West Texas during the first half of 1929 reached a record-breaking rate, establishing a number of promising new areas that possess important prospects. However, in consideration of the fact that much of the acreage under development at this time is rather closely held by conservative groups, it is not expected that any intense drilling will attend these discoveries during the last half of this year.

In general, the situation in West Texas is in a healthy condition in view of the fact that there is really an absence of active fields. While wildcatting continues in a number of promising areas, it is generally conceded that practically all of this development is controlled by companies that are primarily interested in proving new areas for future development. From a drilling standpoint, the Hendrick field, in Winkler County, is removed from the picture, owing to the fact that it has been practically all drilled up. The only effect this area could have upon the market would come with the possible lifting of present proration, and there is little likelihood of that for some time to come. On the other hand, Yates, Gulf-McElroy, Crane County, Big Lake, Reagan County, and the Monohan field, Ward County, offers possibilities for an intensive drilling campaign. However, under the conditions outlined above, it is not expected that these areas will exert any marked influence upon the general market structure during the latter half of this year.

(Continued on page 162)

XUM

PIPE LINE EXPANSION WORK

First Six Months 1929

CALIFORNIA—OKLAHOMA-KANSAS—TEXAS

California Lines Fail to Keep Pace With Increased Production

BREAKING a precedent which was originally set more than 50 years ago, pipe line construction in California failed to keep pace with the increase in production during the wave of flush production of the past 18 months. In the past the great bulges in the production graphs have been accompanied by numerous additions to the 5500 miles of oil lines, but the great development program of the past year and a half has been carried out with only minor additions to a very complete system of trunk and gathering lines.

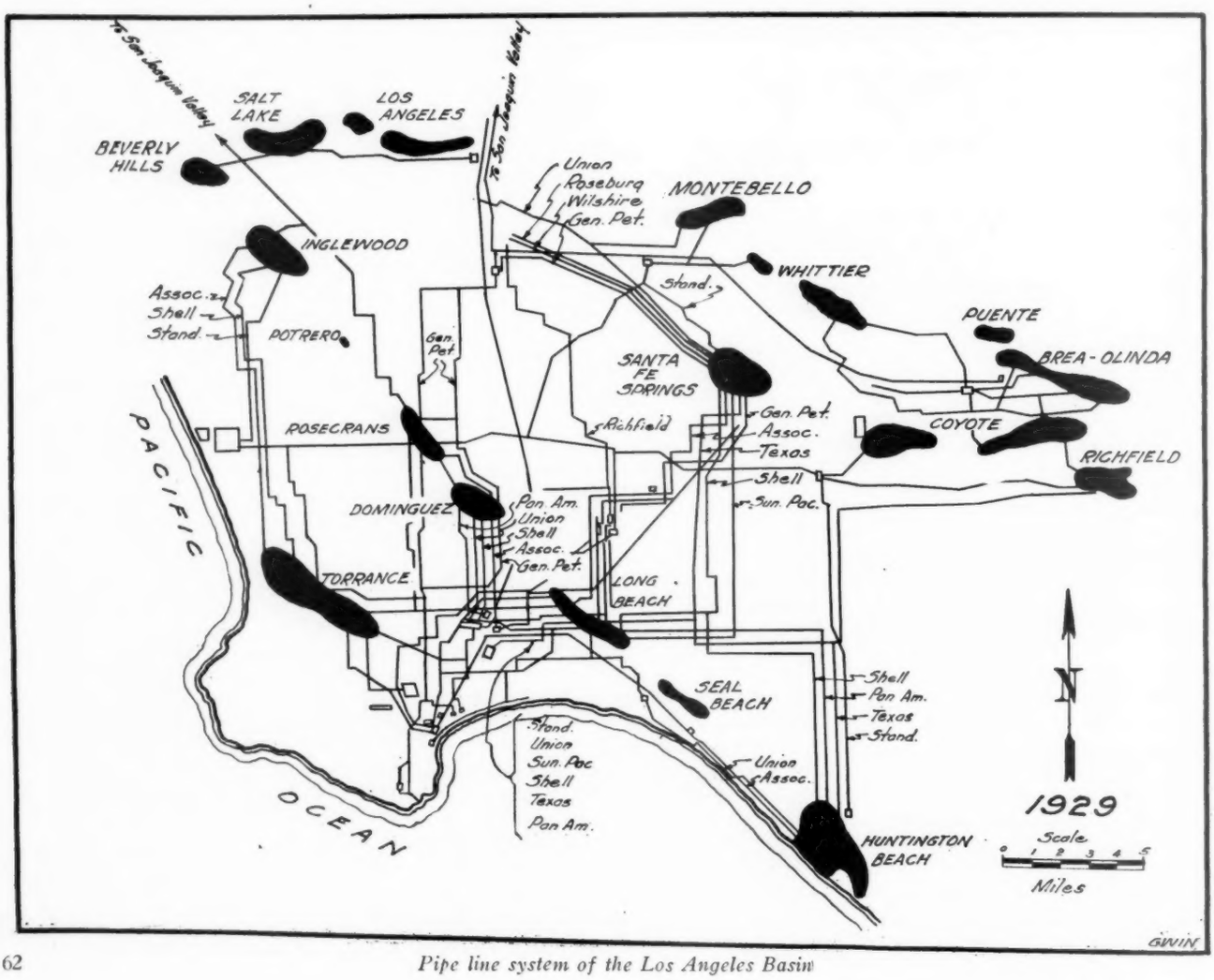
Failure of pipe line construction to show a percentage of gain comparable to the increase in crude production was caused by reasons which often affect any district where re-development and the discovery of new fields are within a fairly well defined radius.

Deeper drilling at Long Beach and Santa Fe Springs was chiefly responsible for the production increase. In both areas, however, the peak fell considerably below that of 1923-1924, making the pipe lines built during the earlier years adequate for handling oil from the deeper zones.

Several fields were discovered in different parts of the state during the period, but in only two cases was a new producing area more than a few miles from a trunk pipe line.

Pipe line construction in California has roughly been classed in four cycles. The 1920-1925 period was so extensive that during the subsequent years an over-built condition prevailed. The 100,000-barrel increase during the greater part of 1928-1929 merely gave the pipe lines more to do, rather than making it necessary to build additional trunk lines. Development of the deeper zones so closely paralleled earlier drilling in the upper zones that in many cases field gathering lines were utilized.

General Petroleum Corporation provided an outlet for a limited amount of crude from the Kettleman Hills field, through the construction of a six-inch line to connect with its trunk line at Lost Hills. The new line is about 35 miles long and may prove large enough to carry the bulk of production for another year.



Pipe line system of the Los Angeles Basin

Only one well has been completed in the field.

General Petroleum Corporation recently completed an eight-mile, eight-inch oil line to connect the Mt. Poso field with the company's trunk line in the Kern Front field. This line provided the first outlet for Mt. Poso crude and was built because of lease requirements, rather than a desire to market heavy oil which is not needed. The line is large enough to meet all needs of the field.

Discovery of a field as important as Elwood ordinarily would result in the construction of at least two large pipe lines. The position of the field, however, has made it unnecessary to build any trunk lines. The field gathering line system is extensive and complete, but the trunk line from the field consists of a few hundred feet to connect with ocean tankers and a short line to a nearby railroad spur.

The new fruitvale field was responsible for the construction of only a few miles of six-inch line. Union Oil Company, one of the principal operators in the San Joaquin Valley, laid the line to connect with its vast system of trunk lines. Location of the field will warrant only the construction of short lines.

Anticipating a large production from the Rincon field, General Petroleum Corporation completed an eight-inch line to Ventura, a distance of eight miles. This line has not proven especially profitable, it may serve as an important link to a trunk line along the Pacific Coast at a future date. Intensive development along the ocean front is under way and the Rincon field may inadvertently become a cog in a longer line.

Discovery of the Potrero field, at Los Angeles' back door, has necessitated the construction of only a short line by the Associated Oil Company. Located between the Rosecrans and Inglewood fields and near several trunk lines, the small production from this new area has been easily handled.

Tank Farm and Loading Lines

The laying of crude and fuel oil lines between tank farms and refineries and between refineries and loading docks has been fully as important as the construction of lines to transport oil from the fields. Changes in the Los Angeles Basin and additions to refineries have necessitated an increased pipe line system in some sections.

Rio Grande Oil Company, a recent entry into the California territory, laid about 75 miles of four, six and eight-inch lines between the Santa Fe Springs field and its Vindale refinery, and between the refinery and loading docks at the Long Beach harbor. The new system of pipe lines gives the company complete facilities for bringing crude to its refinery, as well as for sending fuel oil and crude to the harbor for shipment.

Richfield Oil Company materially increased the capacity of its transporting system, through the construction of several short crude and fuel oil lines in the Los Angeles Basin. A 12-inch line was completed between the Hynes refinery and Long Beach harbor, while one six-inch and three eight-inch lines, laid parallel, were built between the Pan-American refinery at Watson and the Long Beach refinery. These lines may be used for either crude or fuel oil.

General Petroleum Corporation completed one 12-inch line and two eight-inch lines between its new Torrance refinery and Wilmington tank farm, a distance of four miles. These lines will be used exclusively for transporting crude oil.

California's trunk line system is believed to be adequate for handling oil produced during the next few years, with the possible exception of the Kettleman Hills output. Three great trunk lines lead from the general area to San Francisco, and they probably will prove equal to the task ahead. The decline of the northern fields—the Midway-Sunset district—has forced these lines to operate for years at far below their capacities.

Only two trunk lines lead from the San Joaquin Valley to the Los Angeles Basin, but they are in a position to handle a large amount of light oil from Kettleman Hills, if the necessity arises.

Over 3000 Miles of New Line Laid in Texas

MORE than 3000 miles of new pipe lines for the transportation of crude have been completed within the past 12 months to handle crude produced in North, Central and West Texas fields, including a few miles extending across the border into the southeastern part of New Mexico. The past year is not to be equalled in pipe line construction work in Texas for some years hence, as every oil producing area in the state is now supplied with a surplus of direct transportation facilities, with the West Texas district included, although proration enforcement makes this condition possible.

Major trunk line projects that have been seldom equalled in volume were placed on the completion list within the past year, and most of these were to meet the over-production situation in the West Texas district.

The Texas Pipe Line Company forged ahead to a wide lead over other carriers in the state on pipe line construction work within the past 12 months, having built more than 1000 miles of new trunk lines, involving all sections of the state. This company's biggest project was started late in 1928 and put in operation early in July when direct pipe line connections were built from Lea County, New Mexico, via principal West Texas fields to Houston and Port Arthur. This line originates at Jal, New Mexico, and is made up of 487 miles of 12-inch and 157 miles of 10-inch welded pipe rated at 60,000 barrels daily capacity, with a 46 mile six-inch extension line from San Marcus station to the San Antonio refinery of The Texas Company, while 48 miles of six-inch line is being built north from Jal to recently established oil areas in New Mexico, thus giving the line a total length of about 612 miles, exclusive of gathering and lateral lines.

North and Central West Texas Link

In providing direct connections with the Texas Panhandle district, The Texas Pipe Line Company built 157 miles of eight-inch line from its Kingsmill tank farm, Gray County, to the South Vernon field, North Texas, district, and 32 miles of 8-inch from Ragle station, Archer County, to South Bend station, Young County, thus affording a direct connection for the first time between North and Central West Texas district. During the last half of 1928 the company also built a 34 mile eight-inch loop from Dallas to Reagor Springs, thus giving three eight-inch lines between Dallas and Corsicana, while 146 miles of eight-inch line was built from Corsicana station to San Augustine in order to permit the tapping of a partially idle line coming through the latter point from Arkansas-Louisiana fields to Port Arthur.

Included in the group of small lines built within the past 12 months by The Texas Pipe Line Company is a 30 miles six-inch crude line from Panhandle station to Amarillo, where The Texas Company has a refinery. This small line was completed early this year, or about the same time that oil was started running through the Panhandle trunk line to South Vernon district. A loop was built from the latter point to the Electra pump station. About 21 miles of four-inch line was recently built from the Bulcher field, Cooke County, across the Red River to tap the company's Healdton - Sherman eight-inch carrier. A small line was also recently built from Bunger district to the Bryson field, Jack County.

Atlantic Entered Field

Atlantic Pipe Line Company entered the ranks of major pipe line companies in Texas in January of this year by the completion of its 509 mile 10-inch line from Midland tank farm to Atreco terminals, near Beaumont. This company completed early this month a 17-mile, six-inch line from the Shipley pool, Ward County, to a point near Pyote, where connection was made

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with its West Texas trunk line system.

Gulf Pipe Line Company came forward with a big pipe line construction program during the first few months of 1929, and followed up with an even greater expansion program in the form of loops in April. This carrier extended a line from its Midland tank farm station to Hendrick field, using 60 miles of 10-inch and 18 miles of eight-inch, and completed the project March 24. Materials were purchased about April 18 for the construction of a 20 mile eight-inch loop on its McElroy-Midland trunk line, and this project was followed closely by purchase of pipe to build a series of loops, aggregating 402 miles of eight, 10 and 12-inch pipe, from Midland through Ranger, Weatherford, Wortham and Lufkin to Port Arthur. This latter project is practically completed, and will permit a movement of 50,000 barrels daily from the West Texas district, as well as taking care of Gulf Pipe Line Company's normal runs from other fields in Texas.

Magnolia Pipe Line Company participated liberally in the new pipe line work within the past year, having completed last August the construction work on 85 miles of eight-inch loops between Midland station and De Leon junction. A 63 mile 10-inch extension line from Midland station to the Hendrick field, Winkler County, was completed about middle April, 1929. A 15 mile four-inch line was built from the company's Hendrick field station and tank farm to the Heck-Scarborough area, located in northern part of Winkler County. A six mile, six-inch line was built in Howard County last August.

Howard County Line

Humble Pipe Line Company's longest line in West Texas within the past year consisted of 63 miles of eight-inch line from Kemper station to the Roberts-Settles field, Howard County, and first oil runs were made about October 20. Ten miles of eight-inch line was built from the Leck pool, Winkler County, across the state line into Southeastern New Mexico several months ago, and a route is now being selected to extend this carrier north into Lea County for about 70 miles. Humble built a six-mile eight-inch loop on its Yates-Kemper unit, and also added three short 10-inch loops at the high pressure points on the lower end of its Kemper-Ingleside system, thus increasing the capacity to 90,000 barrels daily. The addition of pumping units on the Kemper-Comyn portion of its West Texas trunk line system boosted the capacity of this unit to 50,000 barrels daily, thus giving a total capacity of 140,000 barrels daily out of West Texas.

Shell Pipe Line Company obtained its second direct trunk line outlet from the West Texas district through the completion of a 450 mile 10-inch carrier from McCamey station and tank farm to the Houston refinery site of the Shell Petroleum Corporation. This line was built in record time, having received first pipe about November 19, 1928, and all welding work was completed late in March. A six-inch lateral line was extended from Austin station on the McCamey-Houston unit to tap the Salt Flat field, Caldwell County. Shell Pipe Line Company built a five-mile, six-inch extension line from its McCamey-Chicago trunk line system to the heart of the Roberts-Chalk field, Howard County, last August.

Howard County attracted four separate lines from refining plants located near Big Spring and Colorado within the past year. Cosden Pipe Line Company built 12 miles of eight-inch and five miles of six-inch lines, exclusive of gathering system, and made first crude runs in October. The Big Spring Pipe Line Company completed a 15 mile 4½ inch line on the month previous, and the Great West Pipe Line Company's 14 mile six-inch carrier was put in operation in December. The Coltex Refining Company, which operates a refinery at Colorado, supplemented its existing transportation facilities from the shallow oil area in Howard County by constructing 18½ miles of four-inch line early this year.

Pecos Valley Pipe Line Company built a 15 mile, two-inch line from the Pecos Valley pool, located in Northern Pecos County, to a tank car rack at Grant, located on the Orient Railroad, and started running oil middle February.

The most recent independent crude line built in the West Texas district is that of the Wickett Pipe Line Company, which is owned by two affiliated refining concerns at Wickett, Texas. This company built a 15 mile four-inch line from the Shipley pool, located in southeastern part of Ward County, to the plants at Wickett, and began running oil about June 16.

Sinclair Pipe Line Company built 33 miles of six-inch line from its Bradley tank farm and station, located in Northwest Burkburnett field, to the Grayback pool, Wilbarger County, running parallel to an old four-inch line. Operation of this added capacity was started September 19, 1928. Sinclair completed several weeks ago a combination three and four-inch line about 14 miles in length from its gathering system in Wilbarger County to the Tarver pool, Foard County.

Oklahoma-Kansas Transportation Materially Increased

By WARREN BAKER
Staff Representative

THE program of enlarging trunk lines to the Middle West marketing territory from Oklahoma, which commenced a year ago, continues to feature pipe line work in the Mid-Continent. The new lines proposed or completed during the time, together with those constructed during the latter part of 1928, gave the light oil producing area of the Mid-Continent a much larger outlet for its crude production. The expenditure of millions of dollars in completing this work was justified in face of the huge production at one end and the ever increasing demand on the other end.

Foremost among the work in 1928 was the Shell Petroleum Corporation's line. Its line from Cushing to Chicago was enlarged and extended south to the West Texas area, where it joined another line to the Gulf Coast territory. This project stands out as a notable achievement. Sinclair Pipe Line Company enlarged its capacity from 50,000 to 75,000 barrels daily by looping its line from Drumright to Chicago with eight, 10 and 12-inch lines. This line was completed early in January, 1929.

Commencing where these two major projects left off, other transporting companies enlarged their outlets. Foremost among these was the spending of $15,000,000 by the Texas-Empire Pipe Line Company and $8,000,000 by the Prairie Pipe Line Company.

The Texas-Empire Pipe Line Company, owned 50 per cent each by The Texas Company and the Empire Gas & Fuel Company, was organized early in November, 1928, for the purpose of constructing a jointly owned and operated line from Drumright to Lockport, Illinois, 624 miles, with 200 miles of branch lines. The line serves the refinery of The Texas Company at Lockport and the new refinery of the Empire Gas & Fuel Company near Chicago. The line has a daily rated capacity of 36,000 barrels.

Prairie Pipe Line Company enlarged its transporting facitities 20,000 barrels daily by building 490 miles of eight-inch pipe loops along its 739-mile line from the Panova station, near Shawnee, to Griffiths, Indiana, east of Chicago. Work was started in February and completed May.

Expansion activity of the Prairie Pipe Line Company was particularly interesting the past six months. This company at the opening of nearly every new field that had any promise jumped in at the start on extending its lines to the new producing area. Early in February it built a six-inch line from Towanda to the Sedgwick County field in Kansas. The distance was 20 miles and the line served to greatly aid in carrying off the flush production of that field. Not waiting until it could secure production, the company constructed a line from Shawnee, Oklahoma, to the new Oklahoma City field, where the line laid idle several months waiting on the completion of the first wells that started drilling after the completion of the discovery well. Prairie

(Continued on page 176)

Increase in Use of Natural Gas Rapid in South and West

Past few months has seen construction of numerous transportation lines; California arranging to utilize big surplus

THERE may have been a time when the cry of the natural gas industry, "We are asleep to our possibilities!" may have been an accurate description of the situation. But a study of development in certain parts of the United States during the past six months proves that this industry, if it ever was asleep, has awakened. It is making tremendous strides. This obtains with reference to development of reserves, construction of trunk and gathering lines and systems for wholesale, industrial and domestic distribution.

California, Texas, New Mexico, Kansas, Louisiana, certain of the Rocky Mountain States and Oklahoma are witnessing programs of expansion in their respective natural gas industries.

Texas leads in development of reserves and construction of line systems this year. New natural gas producing areas have been opened in several parts of the state. Big money has become interested in the sale of natural gas there as a profitable undertaking, and the result is that natural gas is supplanting artificial gas, coal and oil in many cities and towns as fuel. Despite the fact that California has long been the stronghold of those engaged in the manufacture of artificial gas, it, too, has awakened to the value of its enormous natural gas reserves. Gas that was blown into the air in California oil fields is being utilized now as fuel in some instances. Consequential programs of pipe line construction are following the realization on the part of Californian's that their natural gas is an ideal fuel. The same holds true with reference to Oklahoma. Gas that was wasted in the effort to produce flush oil is being utilized for supplying the domestic and industrial fuel demand of towns and cities and outside of the state. Louisiana is preparing to accommodate consumption in states as far away as Georgia and Missouri, not to mention those adjoining it. In Kansas, wildcat drilling during the last six months has uncovered valuable gas reserves. Generally speaking, the fuel supply of this state has barely been touched. The people of that state are cognizant of its value. The recovery and distribution of it will follow as soon as practicable.

New Mexico

SOUTHEASTERN New Mexico took a firm position among the important natural gas producing areas in the Southwest within the past six months by development of big gas wells in lime horizons over a wide section of Lea County, particularly around Jal. Both sweet and sulphur contaminated gas is produced in this comparatively new field, but the latter predominates, and has to be treated before suitable for domestic consumption. Prospects of Southeastern New Mexico becoming a rival to the Texas Panhandle district for major gas line projects are not distant, while the unusually high rock pressure of the completed gassers in the former district is an advantage over the Panhandle district, which averages 300 to 500 pounds rock pressure. The average in Lea County is near 1,300 pounds, with gas volume per well about the same for the two areas.

West Texas district, which has heretofore been lacking distinct gas areas, made some progress to this end within the past six months, including a dry and prolific gas area to the north of Kermit, Winkler County. The latter discovery was made by M. J. Bashara's test on fee land. Ward County scored a wildcat gas well in the north end of the county through the efforts of the Prairie Oil & Gas Company on the Sealy ranch, and the production is being sold to the Southern Union Gas Company. In Northern Pecos County, O. J. Perren et al developed a 20 million cubic foot dry gas well from lime at 1490-1502 feet, and shut in same pending a market outlet. Such a predicament confronts the small wildcat gas wells brought in on nearby locations, but separate horizons on the University land, located west of the Yates field, by Geo. H. Anderson and Tower & McKenna and by Alexander-Lyles-Eastland Oil Company et al. The Simms Oil Company uncovered a shallow gas field in southwestern Mitchell County early this spring, but no market has been provided for the shut-in production.

Northwestern Comanche and Erath Counties have been the scene of considerable new gas development within the past six months, thus materially boosting the reserve gas supply in the Central West Texas district. Coleman County has been the most consistent source of new gas production since the first of the year, and just lately the Morris field has contributed an aggregate of about 100 million cubic feet of new gas production, although this volume recedes rapidly.

Drilling carried out for the development of gas acreage in the Texas Panhandle within the past six months has greatly boosted the available supply in the district, especially in Gray and Wheeler Counties, but only a small area of new gas producing acreage has been uncovered to replace that now being drawn upon heavily.

Oklahoma

WITH the Texas Panhandle area continuing to rule the natural gas markets of the Mid-Continent, natural gas development in Oklahoma has not been pushed as rapidly as it might under other conditions. However, during the first six months of 1929 there were two important new gas fields developed.

These were the Oklahoma City and South Little River pools. At Oklahoma City a tremendous gas reservoir was uncovered but passed up by most of the tests in going to the deeper 6400 foot oil sand horizon. This field has three big gas producing horizons: the Tonkawa at about 4000 feet, the Layton at 4900 to 5000 feet and the gas

found just above the oil sand at about 6300 feet.

While only a few wells were completed at Oklahoma City as gas wells, and these for fuel purposes, the large volume of gas encountered by some of the tests warrants the development of the region as a gas producing area. The gas producing area was proven to be quite large by the Wirt Franklin Oil Company's Lowry 1, SWc NW NW Section 12-11-3w, which came in for 50 million feet of gas at 4010 feet in the Tonkawa sand.

Some of the wells faile dto find the big gas production in the Tonkawa and Layton, but practically without exception, these same tests located big gas recovery just above the oil sand. The discovery oil well, then a rank wildcat, which was completed for 5700 barrels of oil from 6355-6498 feet, had 25 million feet of gas at 3997-4012 feet and 47,000,000 feet from 4805-16 feet, in ad dition to the gas just above the oil horizon. Some of the wells found as much as 95 million feet f gas in the horizon just above the oil sand, with some wells of the upper formations finding 60 million feet.

The discovery of the gas horizon at Little River was a matter of luck. The gas was found when an old test that had been carried to the Wilcox sand was trying to pull the big pipe and it parted at 3100 feet. The gas had been passed up unnoticed by rotary drills in the rush for Wilcox sand oil production. A number of companies then adopted the policy of ripping the gas at this depth, which is considered the Gilcrease or Cromwell sand and completed the tests as wells. Some good oil producers were also found by this method and quite a shallow drilling campaign developed.

The gas field adjoins the oil producing area of Little River on the south and overlaps for a short distance. Oklahoma Natural Gas Company is taking the fuel.

The old Chickasha gas field had its usual year, with a number of good gas wells completed, but development there was slower than it has been. An important deal in this field was the purchase by Oklahoma Natural Gas Company of 400 acres from George Stogner of Chickaska for a consideration understood to have been between $350,000 and $400,000. The properties have 20 producing gas wells making 400,000,000 cubic feet daily.

In addition to the above development there were several wildcat gas wells completed in Noble, Okfuskee, Hughes, Pontotoc and Seminole Counties that were of merit.

Kansas

THERE were several important natural gas developments in Kansas during the first part of 1929. The Central district was featured by the discovery of a good gas area in Harvey County, near Halstead. In the southwestern district a new pool was opened up near Hugoton in Stevens County and further development was made in Barber County.

Shell Petroleum Corporation completed two gas wells on its Haury holdings near Halstead. One of these flowed as much as 43,000,000 feet. The wells are in Section 11-23-2w. The gas had such a large sulphur content that its value as domestic fuel was greatly reduced.

Considerable attention will probably be paid to gas development in southwestern Kansas. In Stevens County, a new shale gas pool was found, which resulted in starting some blocking in that district. This discovery well was J. V. McKenna's SEc NE Section 10-33-38w, which made 3,500,000 feet at 3579-3636 feet. This area lies immediately north of the Oklahoma Panhandle.

In Barber County, Barbara Oil Company's Lytle 1, NE NE SW Section 12-33-14w, an important wildcat, was completed for 20,000,000 feet of gas after drilling to 4646 feet and plugging back.

California

CALIFORNIA is one of the few oil producing states in which a large production of natural gas is not obtained from strictly gas fields. In discussing natural gas, it is, therefore, possible to do so only in connection with the oil fields. The great cities now using natural gas are supplied from the oil fields and not from gas fields, as in many other states. Only one gas field of importance has been found, and it has never played an important role.

Excess gas has been a source of worry in California for several years, but during the past six months the surplus has been so great that steps have been taken to stop the waste which is rapidly draining the known reserves. Regarded at first as a necessary evil in the production of oil, the situation has completely changed and the state government is now arranging to enforce the conservation of this valuable fuel.

Development of natural gas in California has been incidental to the intensive drilling of oil leases and the supply has more than doubled against the wishes of the operators. In all of the districts where a waste exists, natural gas has borne the brunt of the development. The oil was wanted and could be used, but that vital constituent which is chiefly responsible for the production of oil was frowned upon and wasted because there was no need for it.

Santa Fe Springs has been the center of natural gas development during the past six months, and incidentally the center of the greatest waste. With the development of the Buckbee and Nordstrum zones, the daily gas waste approximated 500 million cubic feet daily. Additional gathering lines were built to carry the gas to market, but in spite of every effort to utilize the surplus, even at the expense of the settled fields, the waste mounted.

The Buckbee zone had hardly begun its rapid decline when the O'Connell zone was discovered. The gas-oil ratio in this sand was much better than in the Buckbee, but it was soon evident that the surplus might even be greater, due to the overlapping of the Buckbee zone excess.

Natural gasoline plants were hastily built and succeeded in extracting the gasoline from most of the wet gas, but the dry gas was blown into the air. One plant wasted almost 100 million cubic feet during the peak production, with others bringing the total to a staggering figure.

Repressuring Did Not Appeal

One major company used a part of its surplus gas for re-pressuring the depleted upper zones, but this commendable step failed to appeal to operators who apparently did not have time to worry with a large excess.

Ventura was the center of criticism during 1928, but other fields wasted so much more gas during the first part of 1929 that the field became only a minor flaw in a "comedy of errors." The development of additional gas during 1929 was not as great as the corresponding period of 1928, and, as in other combination gas and oil fields, was incidental to the production of oil. The economics of pinching in the wells to conserve gas was questioned by operators who had practiced conservation, and much of the shut in gas and oil was released.

Long Beach was responsible for a large part of the natural gas produced in the Los Angeles Basin and the new wells were sufficient to prevent a sharp decline from the peak of a year ago. The assurance that this field will yield enormous quantities of gas several years hence has been responsible for its key position in the Los Angeles Basin. Much of the gas produced is wasted but the surplus is expected to be much smaller when other critical fields are brought under control.

Kettleman Hills Offers Big Supply

Kettleman Hills now looms as the future source of supply for all of the area known as Northern California, although in reality the district is Central California. This district probably could produce enough gas to supply Los Angeles and San Francisco for 20 years, but there is little likelihood that the former city will need assistance from the area for several years. One well has been producing about 75 million cubic feet of gas for more than eight months and it is believed that 20 times this amount can be developed. As a potential gas producer, the field probably is the most important in California. It may be possible to develop a large gas production on some parts of the three domes without oil, although such a theory does not meet unanimous support.

Buttonwillow, the only gas field of much importance in the state and a district that produces an ideal dry gas, did not see much action during the past year. Many wells have been completed and shut

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California Drilling Unabated Despite Curtailment Effort

Production and accumulated stocks at highest levels after conservation move fails; gas-saving legislation doubtful force

By BRAD MILLS
Staff Representative

STARTING the year with a production of about 708,000 barrels, California furnished a veritable deluge of oil which sent the state total to about 875,000 barrels at the end of June. This huge increase was enough to wreck the equilibrium of the entire crude structure, but the optimistic spirit of the industry insisted that the future held good things in store and the surplus crude was absorbed in good fashion. Storage increased all during the first part of the year, despite an increased consumption. The critical fields were pictured as only temporary enigmas and were allowed to produce at practically capacity all during the period.

The storage problem appeared serious on the surface, but fortunately the companies with the greatest flush production in the critical areas had the greatest need for the oil. Total stocks soared more than 20 million barrels during the first six months, reaching a new peak for all time at the end of June. The former peak of 160,419,966 barrels was reached in March, 1929. Actual figures for July 1, 1929, are not available, but they are estimated to be well above the 160-million barrel mark.

Although light crude stocks increased almost 15 million barrels during the first six months of 1929, the total was somewhat smaller than the peak of 44,463,968 barrels established in February, 1926. The surplus light oil was stored by companies which suposedly needed the oil for future use, but a continued overproduction may result in a further weakening of the crude market. Just as the situation now stands, the light oil in storage may be used economically, but if plans for a reduction fail during the last months of 1929, the surplus will become top-heavy in spite of an increased consumption.

Conservation Failure

Conservation in California during the past six months makes an interesting bit of history, but hardly has a greater failure been recorded in recent years. During February and March, the regional committee of the American Petroleum Institute apparently had the operators whipped in line, but in spite of the effort of the umpire and a few companies that really wanted conservation, the plan collapsed. Several orders were issued and an honest effort was made to reduce California production during the present year to the average of 1928, but through lack of cooperation little was accomplished. The average allowable figure for the year was 650,000 barrels daily, a gross production which would have pulled the industry out of a rut and placed it on a sound basis. It was contended by the optimistic, who, incidentally, were the operators least in favor of conservation, that the overproduction would correct itself in due time and there was no extreme need for curtailment. The failure of these operators to fall in line took much of the enthusiasm out of the program, especially from among those who actually cut back, only to find that offset wells were flowing wide open. The conservation plan, as outlined by the sub-committee of the regional committee was completely abandoned about June 15, with the hope that the gas saving law would remedy the situation within a few months.

The California legislature passed a law which prevents the waste of gas and the industry in the state is all agog over the prospects of reducing production after August 31, the date which has been set as the dead line for producing wells at the expense of gas. The law is sweeping in effct and if not faulted with technicalities may force a radical reduction in output. It may require 60 days, however, to force a shutin after August 31. The waste must be "unreasonable," according to the statute, and thereby may hang a tale.

Santa Fe Springs

Starting the year with a threat, Santa Fe Springs held the spotlight during the entire period, and at the beginning of the second six months was going stronger than ever. The rush to develop the Buckbee zone resulted in a peak production of about 200,000 barrels on March 1. The decline was rapid and a field total of 150,000 barrels was recorded within a month after the peak had been reached. The zone proved to be small and thinner than anticipated.

The discovery of the O'Connell zone at 6300 feet gave fresh impetus to deep sand development and fully 100 wells were started for the new zone. This sand proved to be thick and unusually productive, though little larger in lateral extent than the Buckbee zone. Discovery of the upper Clarke zone followed closely and it was found that both could be produced together to good advantage. This combination resulted in many 10,000-barrel producers and several even larger. Production approaching 300,000 barrels July 1, with the peak at hand.

Although Santa Fe Springs should start a steady decline by August 1, there is a possibility that the lower Clarke sand, one of the most unusual formations ever found in any field, will maintain a high average for several months. Productive from 7500 feet to far below 8000 feet and with the bottom not yet found, this sand may again spoil the carefully calculated forecasts of a few months ago. The bottom of the sand has a phenomenal "kick" and the 8000-foot column of oil is lifted with all the ease of shallower producers. Development of this zone will necessarily be slow, a factor which may prolong production far into 1930. By far the largest zone found below the Meyer sand and probably 500 feet thick, the lower Clarke sand, including the third Clarke, looms as a real threat at Santa Fe Springs.

Gas Waste

A study of an idealized cross section of the Santa Fe Springs field shows the area to be one of the most perfect oil traps ever found. With seven distinct zones, at least three of which may be subdivided into two sections, the anticline holds the record in the Los Angeles basin.

The huge gas waste in the field may result in state action, but if operators are able to produce at will during the remainder of the year, Santa Fe Springs will not stage the nose dive it is supposedly about to make; and neither will the natural decline be as fast as during the first part of the year, after the Buckbee and Nordstrum zones had passed their peaks.

Drilling methods have shown such a marked improvement that a large production may be developed below 8000 feet. This and many other factors must be considered when making forecasts for this remarkable field.

In the rush to develop the newer critical areas, the Long Beach field has been neglected during the first part of

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Wildcat Work *Over Wide Kansas Area* Promises Busy Period

Modern exploration methods have materially decreased number of unsuccessful tests; 18 new spots opened this year

By WARREN BAKER
Staff Representative

WITH a total of 128 active tests, Kansas is experiencing the most intensive wildcatting campaign of its career as an oil producing state. As a result of these tests, more than 519 large blocks of acreage have been recorded and will be subjected to development as soon as practicable.

The campaign started three years ago, when major companies commenced moving in core-drill machines to study the formations of Central and Western Kansas. An unusual number of favorable structures were found. Widespread lease blocking occurred in these areas. The next two years this work was repeated many times, with additional areas and new blocks continually being taken. The work is not completed. Large number of blocks still are being taken.

The tremendous territory covered by the Kansas wildcat play can easily be seen from the accompanying map, which shows the number of blocks taken in each county and also the drilling tests. It will be noticed that the area covered extends from Central Kansas to the extreme western boundary, and from the north to the south boundary of the state.

From a drilling standpoint, Sedgwick County, in Central Kansas, leads with 24 wildcat tests. Other counties and their number of tests are as follows: Harvey, 10; McPherson, 11; Marion, eight; Ellis and Saline, seven; Rush, six; Sumner, Osborne, and Reno, five each; Dickinson and Barber, four apiece; Trego, Russell and Rice Counties, three each; Stevens, Lane, Ness, and Harper, two apiece; Sherman, Wallace, Hodgeman, Graham, Pawnee, Edwards, Kiowa, Comanche, Pratt, Smith, Ellsworth, Kingman, and Ottawa each have one drilling wildcat. The central district leads in activity with 78 of these wildcats, but the western portion is of a ranker nature and is rapidly coming to the front.

There are about 45 active core-drill machines in the state, and about five magnetometers, torsion balance and seismograph machines. These are being used to further study blocks that have already been taken.

Success that operators have enjoyed from the employment of the geophysical instruments is shown in the reduction of dry holes and the number of producing wildcat completions made during the past six months. A total of 18 new producing

Showing widespread activity in Kansas

spots were opened during this time in the area shown on the map. These had been core-drilled or studied by the other geophysical machines before testing and making the location.

Blocking

The confidence that operators are placing in such work is shown by the unusual number of blocks that they have taken in rank wildcat territory. A total of 519 of the larger blocks are recorded in the western half of the state. These promise that the great drilling exploration program will continue over a period of several years.

Every county in the western half of the state has had several blocks leased. The above number of 519 includes only the larger blocks. On the map is shown the number of blocks in figures in each county. Sedgwick County leads with 51 blocks, followed closely by Ellis County, with 35 blocks. Other counties and the number of blocks taken include: Harvey, 30; Rooks, 28; Ness, 26; Sumner, 24; Hodgeman and Rush, 22 each; McPherson, 27; Saline, 19; Trego and Barton, 17 apiece; Stafford, 16; Russell, 16; Barber, 15; Reno, 14; Stevens and Gove, 12 each; Kiowa, 11; Ford, Norton, and Comanche, 10 apiece; Pratt, Edwards, Pawnee, and Gray, nine each; Decatur, eight; Finney, Clark, Ellsworth, and Osborne, seven each; Graham and Sheridan, six apiece; Lane, five; Rice and Dickinson, six each; Marion, 24; Sherman, four; Kingman, Harper, Phillips, Wallace, Kearney, Wichita, Haskell, three each; Greeley, Hamilton, Stanton, Morton, Rawlins, Smith, Meade, Clay and Mitchell, two each; Jewell, Ottawa, Cloud, Cheyenne, Scott, Seward, one apiece.

In time all of these blocks will be tested by the drill. Kansas is thus looking forward to the opening of many new producing spots.

Most of the tests are located on large blocks, many of them running around 100,000 acres. There will not be competitive drilling campaigns unless the producing area is found on the edge of some of the blocks.

History

The activity in the central portion of the area on the east side of the map can be traced back to 1915 and 1917, when the Eldorado-Augusta-Towanda areas were factors in the nation's crude production. In the earlier days oil men believed that the oil producing formations of Western Kansas would be too deep for production. Today, with heavy equipment, they can easily be reached. A number of shallower producing strata not known about in 1917 were found in the western portion of Kansas around Russell, Ellis, Ness and counties in that vicinity. Consequently the play from the Eldorado-Augusta-Towanda district went to the east, north and south. The opening of the central play came only last August 8, when the Continental Oil Company-Gypsy Oil Company-Buvibar Petroleum Company drilled in the discovery well at Valley Center. This was after 15 years of drilling in Sedgwick County. The play has swept north, south and west.

In November, 1923, M. M. Valerius and H. F. Wilcox Oil & Gas Company called attention to the possibilities in far Western Kansas by opening the Fairport field in Russell County. The field had a remarkably steady recovery. This resulted in drilling a large number of tests around the pool during the next year. No new fields were opened and most of the companies abandoned the territory, re-entering three years ago when the core-drills and other geophysical instruments were brought in.

Kansas Wildcat Activity Remarkably Successful During 1929

By WARREN BAKER
Staff Representative

THE outstanding feature of development in Kansas during the first half of the year was the widespread success of wildcat operations. Eighteen new producing spots were opened. These were located from the central area to the extreme western portions of the state. Their importance lies in the future development that they will cause and in pointing out the high efficiency of geological work during the past few years in the state.

Activity might be divided into the central area and the western region. From a production standpoint, the central district outran the western portion by a wide margin, most of the activity was also centered here, but the ability of the many rank wildcats in Western Kansas to penetrate producing zones was canny.

Kansas, in 1929, had the greatest drilling campaign it has witnessed since the discovery of the old Eldorado-Towanda-Augusta area, back in 1918. The state's crude oil production, as a result of the Valley Center production in Sedgwick County, was near a new all-time peak recovery.

The Central Area

Sedgwick County continued to be the most active area in the state, as it was during the last half of 1928. Most of the wildcats were centered in the vicinity of this pool. Those drilling elsewhere in this big district can trace their activity back to the discovery of this field in August, 1928.

Foremost among the wildcat discoveries so far this year in Sedgwick County was the Shell Petroleum Corporation's Lygrisse 1, SEc NE Section 15-26-2e. This producer is located six miles southeast of the Goodrich field and nine miles east of Valley Center. It topped the producing Simpson sand formation early in March at a depth of 3164 feet. When deepened to 3167 feet it commenced flowing 80 barrels per hour.

Immediately this area, known as the Greenwich, became the outstanding new pool of the county. Ten tests were soon drilling, of which four were on the Greenwich townsite, despite the fact that Shell Petroleum Corporation and Gypsy Oil Company practically controlled the acreage.

The first well to be completed at Greenwich after its discovery was the Gypsy Oil Company's Hammant 1, SWc NW Section 14-26-2e, an east offset to the discovery well. This well had the producing sand at 3163-64 feet and flowed 1570 barrels initial production. A few other wells were completed in the regular pay sand with the result that a production of nearly 9000 barrels daily has been built up.

A second producing pay sand in the Greenwich pool was found late in June, when Shell Petroleum Corporation's Community 1, NW SE SW Section 16-26-2e, on the Greenwich townsite, flowed 1555 barrels in 19½ hours from a chat formation at 2924 feet. Cavings soon killed the flow. A second well in this formation has been completed. It is a smaller producer.

The only defining markers that have been completed at Greenwich are the Shell Petroleum Corporation's and Producers Oil Company's failures. The former's well is in the NW NE SW Section 14-26-2e, one-quarter of a mile east of the discovery well. This well filled up with water from 3218-19½ feet. The latter's, in the C SW NE SE Section 31-26-2e, south of Greenwich, had water in the Simpson sand at 3359-67 feet.

The remainder of the drilling tests at Greenwich will be completed soon, and while the field does not appear to be as large as it was expected to be when the discovery well was drilled in, additional drilling will probably be done in the region.

Sedgwick Wildcat Strikes

Very shortly after finding the Greenwich field, Dickey and Shawver, Shell Petroleum Corporation's wildcat test on the Robbins farm, in the NWc SW Section 21-28-1e, south of Wichita, and 12 miles south of Valley Center, encountered the chat found just above the Mississippi lime. After starting off at 200 barrels

daily, it was deepened and gradually increased its production to 552 barrels.

The second completion in this new field, called the Robbins or Dickey field, was the White Eagle Oil & Refining Company's Robbins 1, NEc SE Section 20-28-1e, the west offset. It had the chat producing horizon at 3092-3111 feet and was a much smaller well than the discovery producer.

The only other completion up until the end of June in the Robbins field was the test of Hartman & Skaer, in the NW SW SE Section 21-28-1e, which had a small show at 3109 feet, but encountered water at 3116-22 feet. This disappointing development is thought to be indicative that the producing region of the Robbins pool will probably be small.

In addition to the Greenwich and Robbins fields, a few other wildcat strikes of minor importance were made in Sedgwick County. H. H. Patton and L. H. Wentz's Swanson 1, NWc NE Section 6-26-2e, also east of Valley Center and near Greenwich, looked like a dandy producer when first drilled in, but water soon cut its production. The well swabbed 984 barrels the first 19½ hours from chat at 3005-10 feet. It is now pumping 100 barrels of oil and 270 barrels of water.

Shawver & Mission's Broer 1, NEc SWX Section 5-26-2e, seven miles east of Valley Center pool, swabbed 75 barrels in five hours from 3020½ feet, and was completed as a small producer. Barnsdall Corporation's Samuels 1, NEc NW Section 24-25-1e, three miles east of the Goodrich field, swabbed 75 barrels of oil and 19 barrels of water in 12 hours, and is a small pumper. It is producing from the chat at 3053 feet.

Valley Center Most Concentrated Development.

The most concentrated drilling campaign in the state was the development of the Valley Center field, discovery producing area of Sedgwick County. The rapid development of this area, together with the wildcat strikes, permitted Sedgwick County to play the leading part in Kansas activity in 1929.

In June this county was producing one-fourth of the state's production, which was near a new all-time peak recovery. A total of 85 producing wells were completed in the county, all at Valley Center with the exception of a dozen wells. The county had a recovery of slightly over 35,000 barrels daily.

The drilling development at Valley Center was practically completed by June and the recovery of that area will probably slump. The eastern part of the field is developed and the west half is under the control of Bu-Vi-Bar Petroleum Company, Marland Production Company and Gypsy Oil Company, who are conservatively developing their properties.

If the high rate of production can be maintained in Sedgwick County, Kansas will come near to breaking the old 1918 record annual recovery for the state, which was 43,000,000 barrels. During the first half of 1929, the state produced nearly 20,000,000 barrels of crude.

The Valley Center Townsite, where a number of tests were drilled, proved to be non-producing, except in one instance —and this small well was later abandoned. There are still some drilling wells at Valley Center but their outcome is expected to be nothing sensational.

The Goodrich field, found late in 1928, which set the state's greatest drilling campaign off, proved a fizzle. The south offset to the discovery producer was dry and the north offset was only a small well. The discovery well, Marland Production Company's Goodrich, Section 16-25-1e, continues to be a good producer.

Other Central Kansas Developments.

In extreme Southern Central Kansas, Gypsy Oil Company completed a very important test that revived interest in that territory. It was Williams 1, NW SE SW Section 16-35-3w, near Caldwell, in Sumner County. The well is just north across the Oklahoma line into Kansas. A number of flashy completions have been made in the past in this territory, but soon have dropped in production, and the offsets have been very small wells or failures. The continued fine performance of the well, which is still doing 1000 barrels daily after commencing at 1400 barrels, is causing operators to keep an eye on the new pool. The second completion in the immediate vicinity of the strike will be made soon.

A new field that attracted considerable attention during the earlier part of the year was the Hillsboro pool of Marion County, where Viola lime production was found late in January. Empire Oil & Refining Company discovered the deeper producing horizon with its Suderman 1, SEc NE Section 12-19-2e. The recovery of the well was 500 barrels daily from 2837 feet.

This new strike, located 50 miles northeast of Valley Center, caused the spreading out of the play through the central area of Kansas. Its development was rapid, due to the fact that most of the offsets were either drilling or completed in the upper chat pay. Only a few wells found the producing horizon and it was confined to a small area, with only a small recovery.

Harvey County came in for a share of the limelight with the completion of its second gas well. It was Shell Petroleum Corporation's Haury 1-A, SW NE SW Section 11-23-2w, near Halstead. It blew in for 43,000,000 feet of gas at 2954-56 feet. This well is one-half mile west of the original Harvey County well, which was completed by Shell Petroleum Corporation and is also a gas well.

Following the completion of this well, Shell Petroleum Corporation decided to deepen its Haury 1-B, NE SW SE Section 11-23-2w. When deepened eight feet the well began spraying oil and produced 160 barrels daily, with about 20,000,000 feet of gas. This was the county's first oil well and created much attention.

A very important test is the Ted Washabaugh's Voshell 1, NW NE NE Section 9-21-3w. This well has had an unusual run of hard luck that has kept it from being completed. It is spraying oil from the Viola lime at 3300-02 feet. The Voshell test has all the ear-marks of a producer, unless the trouble has ruined it. The well was a very important one as it showed that the producing formations found to the south also carried oil in McPherson County and other northern districts.

McPherson Oil & Gas Company opened up another new pool on June 30 in McPherson County with the largest well yet found in the campaign. It was Ritz 1, NWc SE SW Section 1-20-2w, about 12 miles northeast of Ted Washabaugh's Voshell 1, and about 10 miles east of the town of McPherson. The first hour and a half it flowed 368 barrels and made 193 barrels the next hour partly pinched. It was making nearly 2000 barrels daily pinched while waiting on tankage to be erected.

The producing horizon is chat from 2935-66 feet. Although the well was drilled by McPherson Oil & Gas Company, it is now operated by Shell Petroleum Corporation. Since it is a chat producer, it may not hold its production, but will further increase the drilling activity further north.

In Butler County, Lario Oil & Gas Company's Galancey 1, SWc Section 10-26-3e, six miles east of the Greenwich field, produces 430 barrels daily on the pump from 2700 fet. A number of new locations were made and drilling activity is at a height in the district now.

Western Kansas

Western Kansas never enjoyed a more successful wildcatting period in its history than during the past six months. None of the new strikes, however, have resulted in any concentrated drilling development. This is due principally to the fact that all of the new strikes are located on huge blocks of acreage and there is little or no need for competitive drilling. There have been no large wells, but the importance of the wildcat producers cannot be overestimated. They have shown that there is oil in the territory and their influence is being felt by the increased number of wildcat tests.

Ellis County probably should be taken up first as it had the largest number of new finds to its credit and is also in the center of operations. Phillips Petroleum Company has been usually successful in in this territory. The company's Sophus Johnson 1, SW NE Section 9-13-19w, has a depth of 3595 feet or 120 feet in the Oswald lime, where it is good for 500 barrels per day. The well has swabbed 380 barrels in 12 hours of 33.5 gravity oil. This well was completed late in June.

Danciger Oil & Refining Company's Schemidler 1, NWc Section 20-12-17w, two miles south of the Phillips Petroleum Company's Shutts 1, completed last November as the first well in Ellis County, came in for 125 barrels per day from the Oswald lime. The well is looked upon as an extension to the Shutts pool and which is controlled mostly by Phillips Petroleum Company.

A most important well was the Central Commercial Oil Company's Ellis-King 1, NE SW NE Section 20-13-21w, a rank wildcat in Trego County. This well further pushed the western producing boun-

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New Production *Found Over Wide Area And at NEW DEPTH in* West Texas

Seventeen new producing spots yield oil or gas during past 12 months, while deep sand offers new possibilities

By H. H. KING
Staff Representative

SEVENTEEN widely scattered oil and gas discovery wells were completed in the West Texas district within the past 12 months as a reward for the record breaking volume of wildcat activity conducted during this period by independent operators and major companies. This group of discovery wells only offers one area that has immediate prospects of developing into a major source of production, while the most important strike made during this period is probably the discovery of a prolific oil and gas producing horizon at 8500-23 feet in the Big Lake field, Reagan County, thus definitely establishing commercial production at a new record depth. Shallower producers and a higher grade of oil for an average predominated in the crop of wildcat oil completions.

The estimated maximum depth for commercial oil and gas production in West Texas became materially altered within the past 12 months, when the new record was set late in November and early December by the Group One Oil Corporation's (Texon Oil & Land Company, which is now controlled by the Continental Oil Company) University 1-B after passing up the two regular producing horizons in the field and a light producing sandy-lime at 6284-6300 feet. This well encountered the 8500-foot oil and gas flow late in November, and was flowing 402 barrels of oil and about seven million cubic feet of wet gas when terrific rock pressure prevented further drilling during the first week in December at a total depth of 8523 feet. The output of oil and gas has gained at regular intervals of three to five days in the face of 190 pounds of back pressure applied, and current production is averaging 2700 barrels of 56 gravity plus (corrected) and about 25,000,000 cubic feet of wet gas daily. This record producer has a string of 5 3/16-inch casing cemented at 6184 feet, leaving 2339 feet of open hole, and the total cost of drilling and completing the well is less than $150,000, according to its owners.

This deep well had produced a total of 461,871 barrels of 56 gravity oil up to the middle of July, and approximately 20,000 gallons of natural gasoline is being recovered daily from the gas flow. Its unusually performance has been the means of stimulating deeper exploration work in other sections of the district as well as the Mid-Continent district proper and California.

Ward County

Ward County joined the list of oil and gas producing counties in West Texas in November and April with two oil areas and one gas pool, and indications are that this county has contributed the most important wildcat strike made within the past 12 months through the completion of Gulf Production Company's G. W. O'Brien 4, Section 19, block "F", G&MMB&A survey, with an initial production of 1500 barrels of 38-39 gravity oil at 2600-2631 feet from sandy-lime. Since completion of this well, Gulf Production Company has extended production one mile to the north with a 100-barrel flowing well, and 2½ miles to the southeast of the discovery well with a producer in process of completion, thus giving the field a length of 3½ miles, with the highest well of the three on the south end. The O'Brien discovery well is flowing about 870 barrels daily against back pressure, and making approximately four million cubic feet of wet gas.

Since Gulf Production Company controls all acreage in a northwest-southeast direction for a distance of 16 miles, this new Ward County strike is not expected to become a market factor, although efforts are to be made shortly to develop production to the east and west of the discovery block, including one test on the east by Continental Oil Company's Sealy 1, Section 81, block "A". Gulf Production Company has mapped out a steady, but conservative, development program on this wildcat block, with plans to flow all wells against back pressure as completed. Prior to the establishing of this oil area, a gas pool was uncovered last November in Northern Ward County by the completion of Prairie Oil & Gas Company's Sealy 1, C SW Section 95, Block "A", making three million cubic feet of sweet gas, with a rock pressure of 865 pounds, at 2526-2575 feet. This gasser was drilled to sulphur water at 3505 feet and plugged back successfully. The production is being marketed with the Southern Union Gas Company. The Shipley Oil Corporation's wildcat test on the S. F. Hayzlett 160-acre drilling block, Section 17, Block 5, H&TC Ry survey, opened the first pool in Ward County early in November with a 125-barrel flowing well at 2481-2506 feet, and since completion of this producer a six- and a four-inch pipe line has been attracted by the five completed wells in the pool.

Pecos County

Pecos County came through with the most rank wildcat completions during the past 12 months, but all were of small calibre and at comparatively shallow depths. However, these strikes have been the means of giving the county an even greater wildcat drilling play, and operators are hopeful of uncovering one or more fields that will rank with the Yates field in area and prolificness.

One strike in particular that was made in Pecos County about June 20th by the Taylor-Link Oil Company's wildcat test on University land, Section 30, Block 16, is being given important consideration from a standpoint of being the fore runner of a productive field. This wildcat was completed flowing 130 barrels of clean 30-31 gravity oil from lime at 1613-28 feet, and a comparatively small production decline has taken place during the first month. This producer is located about 19 miles due west of the Yates field, and its performance led to one of the most active lease buying campaigns on surrounding acreage that has been experienced in the district within the past year. While this well was in process off completion, Buell-Hagan et al's wildcat test on the University "B" lease, located in Section 36, Block 18, and about four miles to the south, developed a 15-barrel well from sandy-lime at 1320-32 feet. These two strikes were preceded by the completion of wildcat gassers on a lime between the oil wells and the Yates field proper. Alexander - Lyles - Eastland Oil Company et al's White-Sellman 1, Section 20, Block "Z", T. C. Ry. survey, made 3½ million cubic feet of gas at 1611-26 feet, with a total depth of 1656 feet, where water halted further drilling. Geo. H. Anderson-Tower & McKanna's University 1, Section 11, Block 17, was completed early this year rated at 7¾ million cubic feet of gas, 870 pounds rock pressure, at 1960-63 feet after plugging back from sulphur water at 1998 feet.

Pecos Valley Oil Company's first wildcat test on fee land, Section 22,

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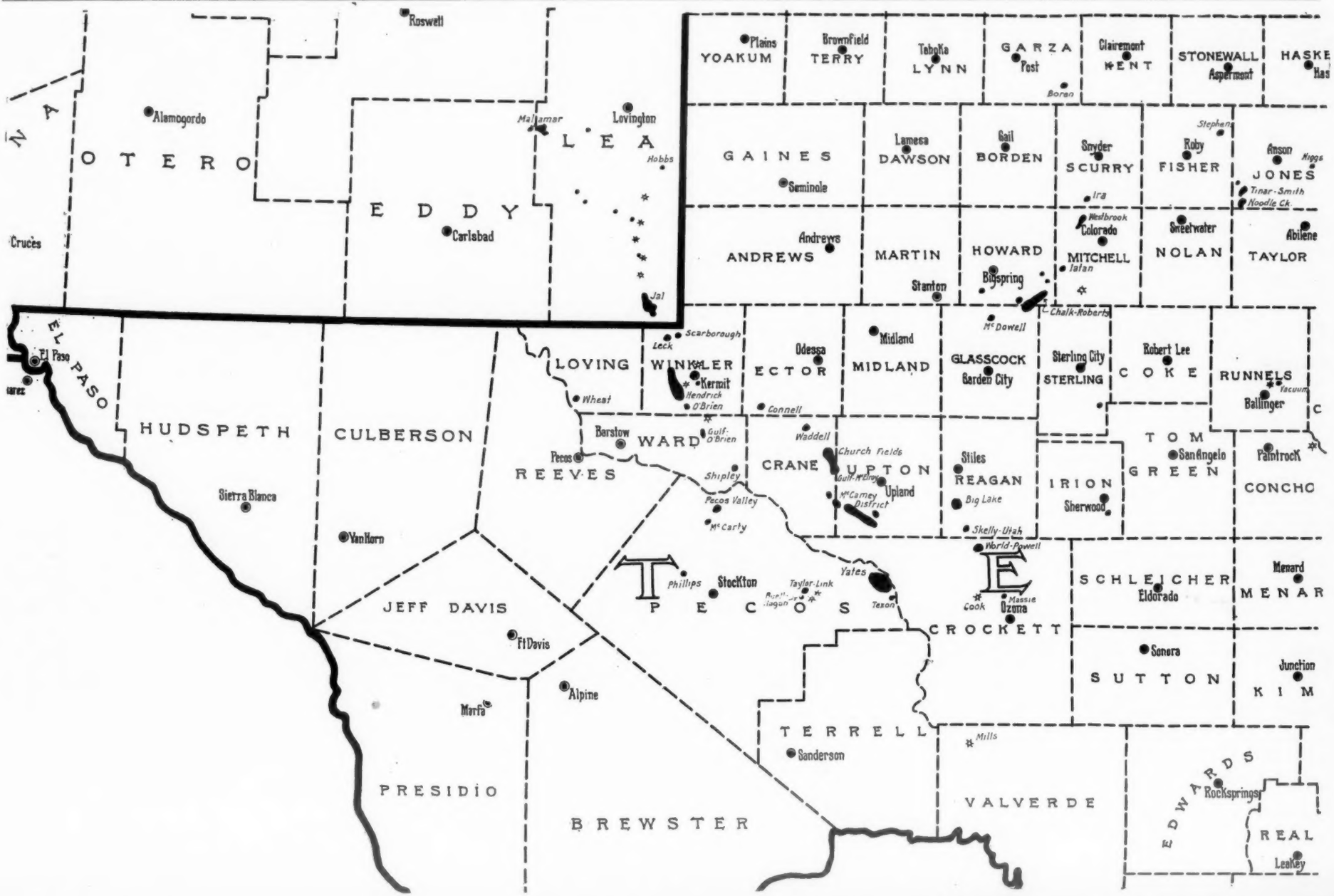
Extent of Production Development in West Texas and New Mexico Area



XUM

Unit Control and Proration Pacts Limit West Texas Drilling

By H. H. KING
Staff Representative

ELIMINATING the established fields that are controlled through proration enforcement and single unit ownership, West Texas has little to offer in the form of oil areas that are apt to have a disturbing influence in the general market situation, or engender a major drilling campaign during the balance of 1929. A generally healthy situation now exists in the district, and because of the absence of active fields, both major and independent companies and operators are trying for new discoveries, or exploring recent strikes that have indications of leading up to the development of important crude sources.

Proven undeveloped acreage that could furnish material for a major drilling campaign and possibly a factor in the local crude situation, exists in the Yates field; Gulf-McElroy area, Crane County; Big Lake field, Reagan County, and Gulf-O'Brien, or Monahan field, Ward County. The Hendrick field, Winkler County, is removed from the picture from a drilling standpoint, owing to it being practically drilled up, but could possibly disturb the market situation for a brief period by the lifting of existing proration rules. The Roberts-Settles field, Howard County, is the third area in West Texas to be under proration enforcement, but all wells are pumping, and the most attractive proven locations have been drilled up.

Yates Field

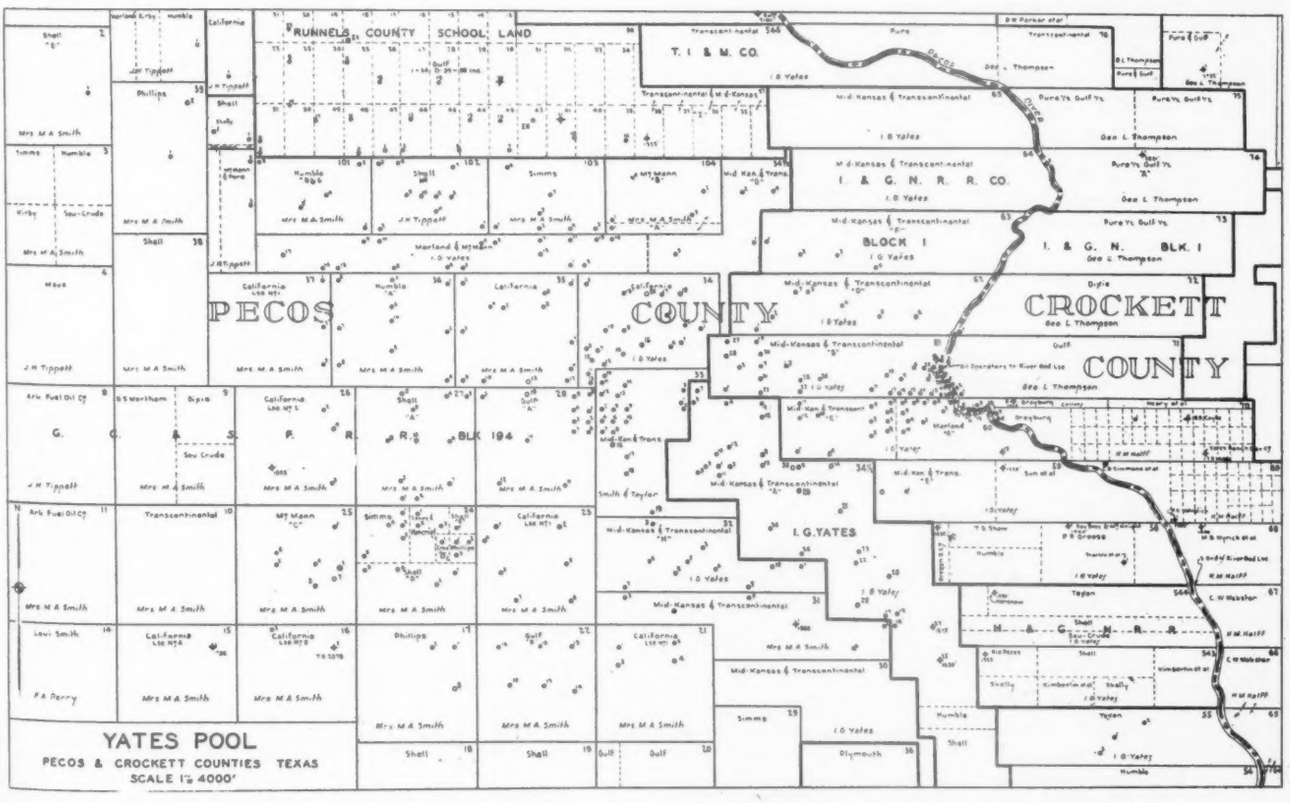
The Yates field is generally conceded to be one of the largest known crude reserves in the country, but it is likewise the best controlled major field, where numerous companies and operators are involved in the lease ownership, as voluntary proration has been in effect since the completion of the first group of producers, and no indications are in sight of restructions being lifted. A small, but steady development program is in store for the Yates field over the balance of 1929.

Gulf Fields

The Gulf-McElroy and Gulf-O'Brien areas are largely controlled by the Gulf Production Company, and only two or three rigs are being operated to maintain production, as well as to satisfy royalty owners. However, the Gulf-O'Brien field, located west of Monahan, Ward County, is a 1929 strike, with only three producing wells, and efforts may be made by lease owners to the east and west of the discovery block to share in the production, thus causing a drilling campaign. Continental Oil Company is taking a long chance on production extending about 2½ miles further to the east, and is drilling on a half-section of land that is held by a short time lease. Gulf Production Company has more than 1000 proven locations that could be drilled on the above two producing leaseholds, but this development work is to be scattered over a period of years.

Big Lake

The Big Lake field offers several hundred proven locations that could be drilled profitably, but this is held in a unit by the Big Lake Oil Company and is to be carried out on a conservative basis. Group One Oil Corporation, which controls the rest of the field, has drilled up its acre-



Showing locations yet to be drilled in what is said to be the world's largest and best controlled oil field

age in the regular horizons. The latter concern has one well on its property making about 2700 barrels of 56 gravity oil and 25 million cubic feet of gas daily at 8500-23 feet, but has postponed further development of this deep horizon, pending the outcome of nearby deep tests being drilled by the Big Lake Oil Company. However, this deep horizon is not to be given any market consideration for some years hence, since only a small number of wells can be completed annually.

Pecos County.

Due to the spectacular performance of the Yates field, any oil strikes made in Pecos County are now given careful consideration for fear that another field of this type might be in the making. Four separate oil strikes were made in the shallow lime horizon in Pecos County within the past year, and two closely located ones on University of Texas land about 19 miles due west of the Yates field are believed to have merit from a future production standpoint, especially since shallow gas production has been developed to the east of same in a trend towards the Yates field. Taylor-Link Oil Company and the Buell-Hagan interests made these two completions, and the former is holding close to its initial flow of 130 barrels natural at 1613-28 feet, with about 12 new tests drilling, or starting up within a five-mile radius. These tests will probably definitely determine the importance of the area from a production standpoint within the next 45 days. Should a prolific field result, a major drilling campaign is certain to follow, but proration enforcement is likewise certain to take place with state-owned land and royalty involved.

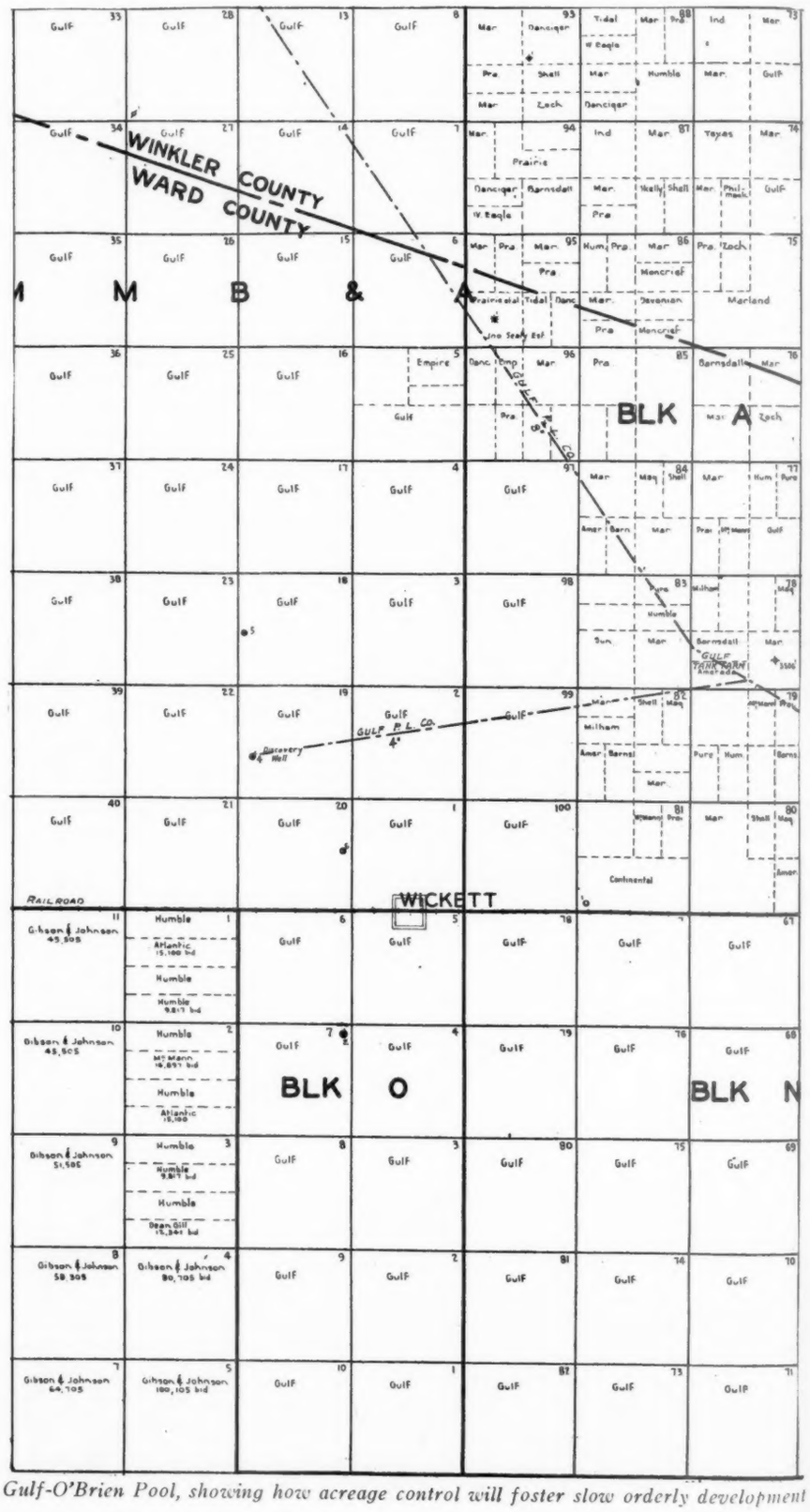
The Church & Fields area, Crane County, is to experience a light development program over the balance of the year, with flush production lacking, while little work is in sight for other older producing, areas, such as the McCamey district World-Powell field, Crockett County, Westbrook field, Mitchell County, Noodle Creek and Tiner-Smith fields, Jones County, and the Stephens pool, Fisher County.

New Mexico.

Southeastern New Mexico is shaping into a possible location of a major drilling and oil producing area in the near future, since Lea County has been found productive of oil and gas over a wide area in a deep lime horizon that compares favorably with structural conditions across the state line in Winkler County, Texas. In fact the "lime high" that cuts across Winkler County has been definitely traced into Lea County, with a series of parallel "highs" or folds, and big gassers have been completed along the ridge, with oil in limited quantities on the flanks. Lea County has more than a half dozen separate oil producing areas, and an even greater number of spots that are making gas in commercial quantities. Operators are now at work in exploring these known producing areas, and a few prolific oil producers is all that is needed to launch an active drilling campaign on nearby acreage, as a ready market for the oil is assured from lines recently built from West Texas into Lea County by the Humble Pipe Line Company, The Texas Pipe Line Company, with assurance of additional lines from the Texas side should justify the expansion across the border.

The early history of oil and gas development in Lea County is a parallel case to the Texas Panhandle, in that a big area was found productive of oil or gas at widely scattered points, with small oil wells predominating, but all on definite trends. Penetration of the gas horizons and the closing in on gaps between isolated oil wells put the Panhandle in the major field class, and a similar prediction

(Continued on page 222)



Gulf-O'Brien Pool, showing how acreage control will foster slow orderly development

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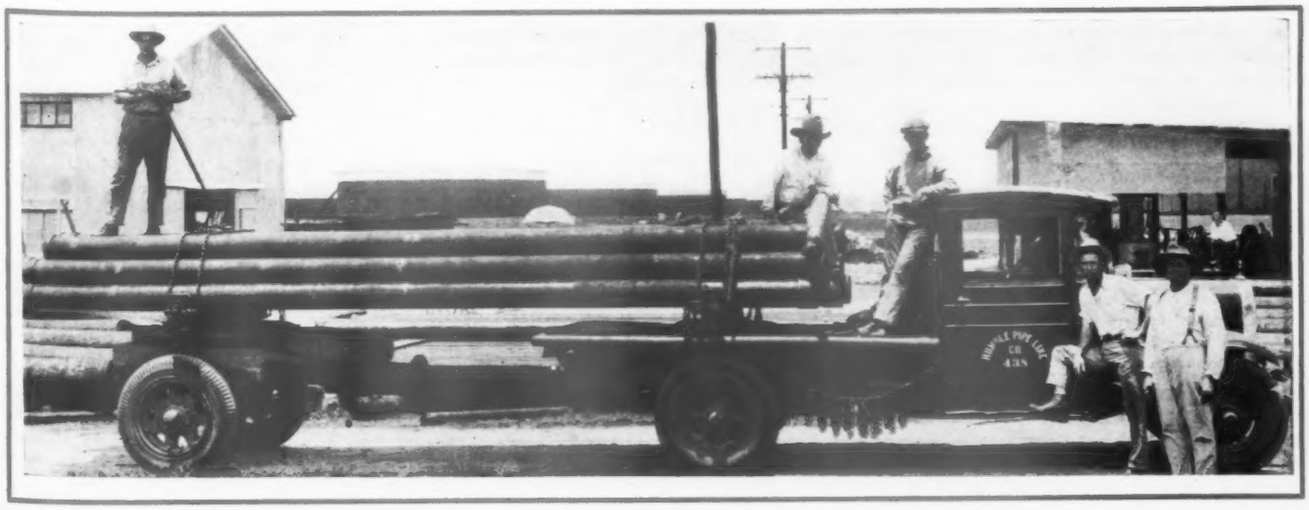


Active Crude Demand Encourages Oklahoma Field Work

Passing of Greater Seminole area as source of big flush production gives deep sand at Oklahoma City prominence

By WARREN BAKER
Staff Representative

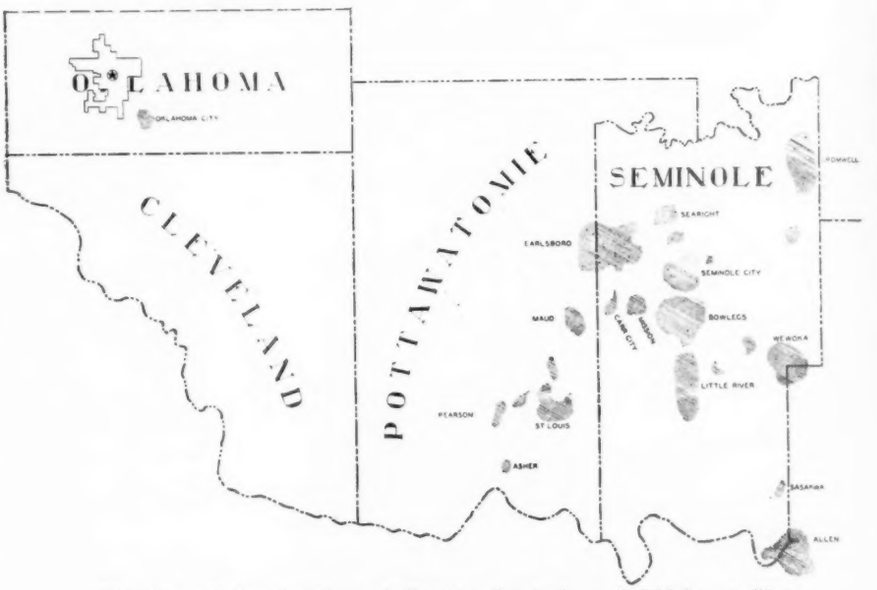
WITHDRAWALS from storage in Oklahoma during the first half of this year, to the extent that an increased crude price eventuated, constituted the prime factor in dedermining the status of drilling activity which may be expected to obtain for the remainder of the year and the first half of 1930.

In the main, withdrawals are attributable to the decline in Greater Seminole. Further alleviation, insofar as the crude sturcture generally is concerned, rests in the fact that Greater Seminole, which yet is the most important market influence in the state, seems to offer no areas for further exploitation of serious magnitude.

Oklahoma City field, due to its location, its influence on future wildcat drilling and being the deepest producing pool in the state, was perhaps the most important development. At the close of June only five wells had been completed. These five wells had a combined daily production of 16,750 barrels. A number of other tests are due to be completed at once, with others to scatter along. With completion of the new wells a number of new tests were being started, and most of these will not be completed until early in 1930. The wells that are now being completed started in January or the last of December.

The completed deep producing horizon wells revealed the field as a high calibre producing area, both in oil and gas. A large gas district was proven, while an oil bearing area of nearly two miles, running northwest by southeast, was proven, with no defining markers to limit it to its present area. A fact that will keep the potential peak production of the Oklahoma City at a minimum is that it takes so long to drill the tests that those now being completed will have declined materially by the time the next crop of wells reaches the producing stratum.

The pool was discovered on December 4, 1928, by the Indian Territory Illuminating Oil Company and Foster Petroleum Company's Fee 1, C SE SE Section 24-11-3w, six miles southeast of Oklahoma City. The well had a peak recovery of 6700 barrels early in January, 1929, when it was deepened to 6494 feet in the producing lime topped at 6402 feet. It maintained a remarkable production record until the last of February, when water made serious inroads on the production, with the result that it became necessary to place it on compressed gas pressure. The recovery of the well was increased by this method to 4800 barrels, but it had again declined to 2200 barrels with 775 barrels of water daily the last of June. This well will soon have produced 1,000,000 barrels of oil.



Showing relative location of Greater Seminole and Oklahoma City

Development of the field has been carried on in an orderly manner. Operators met and adopted a development program soon after the completion of the discovery well. Due to the vast cost of drilling, none were desirous of a hazardous, free-for-all drilling compaign. Locations for tests were selected so that the size of the producing structure could be determined. Now that a number of wells have been completed, operators have met again and approved additional locations with the thought of protecting the property lines and further determining the exact size of the producting area.

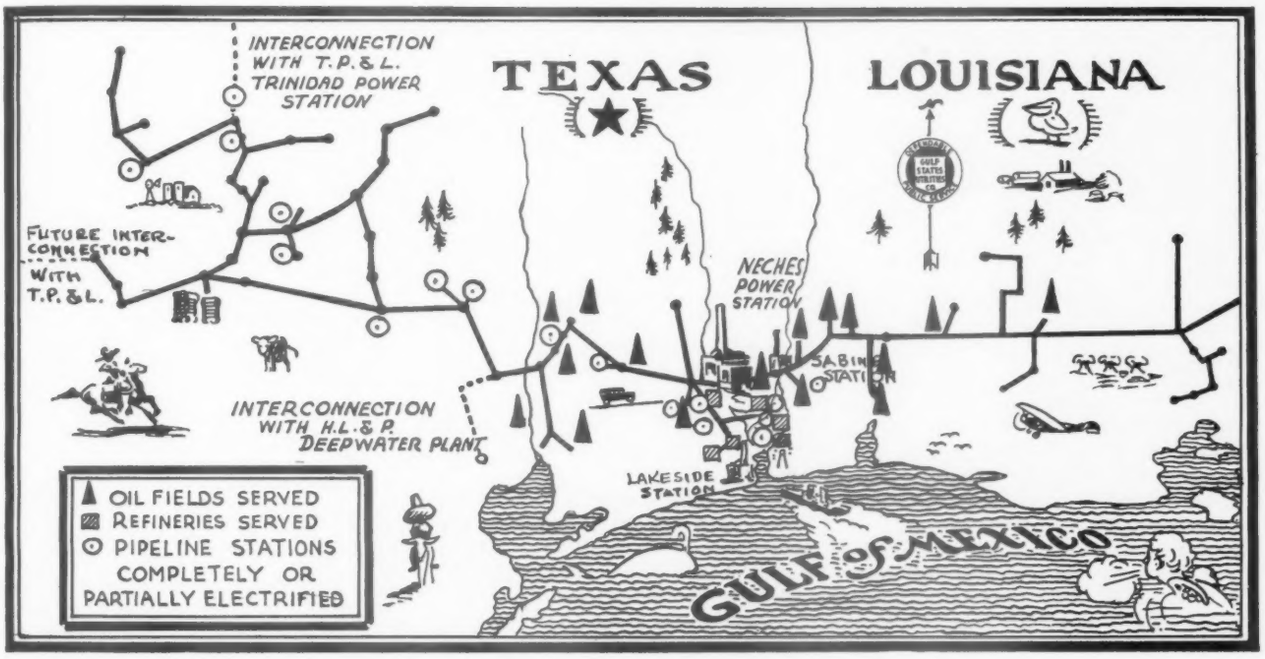
The first test to be able to mud off the heavy gas just above the oil bearing stratum was the Sinclair Oil & Gas Company's Stamper 1, NEc SW NW Section 30-11-2w, one-half mile east and south of the discovery of the discovery producer. This well topped the lime at 6340 feet, with the top of the oil bearing horizon at 6435 feet. It was drilled to 6465 feet and had an initial production of 2400 barrels. A few days later is was carried to 6487 feet and encountered a very small amount of water and was making 2200 barrels daily.

Foremost among the wells completed in the Oklahoma City field was the Coline Oil Company's Olds 1, C SE NW Section 24-11-3w, one location west of production. This well is producing from a true sand instead of the lime that other wells are finding their oil in. The sand may be either the Simpson or Wilcox, a fact not determined. The Simpson and Wilcox sands were missing in the discovery and other producers. The Oklahoma City field may have a structure like that at Garber, where Wilcox sand production was found on the flank of the structure. In event this is true at Oklahoma City, it must be given a higher rating. The Coline well was completed for 4073 barrels at 6311 feet.

The largest well to be found in the field is the Mid-Kansas Oil & Gas Company's Fortson 2, C NW NE Section 24-11-3w, one mile northwest of the discovery well. The well flowed 6735 barrels in one 24-hour period.

Another feature of the field was the gasoline production of the Sinclair Oil & Gas Company and Amerada Petroleum Corporation's Kinter 1, NW NW

ELECTRIC POWER PREFERRED



The use of Central Station Electric Power has steadily increased and a number of extensions to the present system are planned to serve the industry even more completely in this territory.

Gulf States Utilities Company

BEAUMONT, TEXAS LAKE CHARLES, LA.

UNDER EXECUTIVE MANAGEMENT OF STONE & WEBSTER INC.

SE Section 30-11-2w. This well was yielding more than 1600 barrels of casinghead gasoline daily. It is producing from the gas sand just above the oil production.

New Field Between Wekowa and Allen

The latest strike in Oklahoma and one that looks very promising the north Sasakwa area midway between the Wewoka and Allen fields in extreme southeastern Seminole County. This district was opened last year with a small Simpson sand well after plugging back to this formation from the Wilcox sand where water was found. Late in June, 1929, Sinclair Oil & Gas Company's Davis "A" 2, SW NW SE Section 7-6-8 entered the Wilcox sand at 4476 feet and drilled three feet in, producing 4000 barrels daily. It later had dropped to 2928 feet.

Due to a number of tests drilling for the Simpson sand it was but a very short time until others had reached the Wilcox sand. The first was the Shell Petroleum Corporation's Holtaka 1, SW NE SE Section 7-6-8, two locations east of the discovery Wilcox well. This well produced 1635 barrels daily from 4190-93 feet.

Signal Oil Company and Pure Oil Company called attention to the possibilities of the region when their Bond 1, SWc NE Section 13-6-7, one mile southwest of the field came in for 60 barrels per hour from 4162-62½ feet. Immediately the start of a lively drilling camjaign was the result.

There is a total of seven wells, including the shallower producers, making 10,000 barrels daily in the region. Prospecting for oil in the territory has been underway since the discovery of the deeper sands at Allen.

St. Louis A Feature Spot.

St. Louis field is still the site of a good size drilling campaign as a result of late discoveries. The discovery well of a north extension was T. B. Slick's Davis 1, NEc W½ NE Section 18-7-5, one mile north of production. The well was deepened to 4102-18 feet and flowed 200 barrels per hour. The completion of this well jumped St. Louis production to a new peak of 137,331 barrels. Although some good wells were completed as a result of this completion, the producing area was small and it was no market threat. Water materially reducted production.

The next strike was the Magnolia Petroleum Company's Latimer 1, SEc SW NW Section 17-7-4, one-half mile north of Pearson and 2½ miles west of St. Louis. Early in April this well came in for 1700 barrels per day from the Simpson sand at 4365-4405 feet, after being deepened. This opened a vast territory for development and subsequent activity has been very successful.

Just previous to Magnolia Petroleum Company's Latimer completion, Darby Petroleum Company's Youngblood 1, SEc NW Section 16-7-4, midway between the Pearson and St. Louis field, indicated the possibilities of the district. The well produced an initial of 742 barrels from the Hunton. This resulted in but little excitement due to its producing formation.

Things rocked along in the St. Louis district until the later part of April when Martin & Irwin, Keistler & Manning, Sinclair Oil & Gas Company, McGraw Oil Company and Shaffer Oil & Refining Company's Kelly 1, SEc NE NE Section 2-7-4, more than one mile north of the field, came in for as high as 100 barrels per hour from the top of the Hunton lime at 3750-75 feet. This well immediately caused the start of a competitive drilling campaign along property lines in the district.

Although not completely defined yet St. Louis appears to have a small producing area, a number of things indicating it may not be as large as first anticipated.

At the same time the Kelly north extension to the St. Louis pool was being opened up, Independent Oil & Gas Company's Rhodd 1, NWc Section 16-7-4, which would connect all of the area, came in for 3710 barrels daily after being placed on compressed gas lift. The producing horizon of this well was the Simpson sand.

The picture of St. Louis was then a number of wildcat producers toward the Pearson field, with three producing horizons to shoot at. As a result, a large drilling campaign commenced and its outcome will be of great importance.

Independent Oil & Gas Company's Rhodd and Barrows producers are now cutting and the discoveries of the two strikes may not be as important. The failure of offset tests to find good production in the producing horizons makes the region look erratic.

Asher Field

A very disappointing field was the Asher pool, found in May. It created much interest and was rated by many as a major prospect but never produced much over 10,000 barrels and was soon out of the picture, taking with it many costly failures. The field is south of Pearson in southern Pottawatomie County. The discovery well was Simms Petroleum Company et al's Laster 1, SEc NE NE Section 19-6-4e. This well yielded better than 3100 barrels daily from the Viola lime at 3640-85 feet.

The district, including the townsite of Asher, was the scene of much royalty and lease trading, including nearly $2,000,000 spent by Tom Slick Oil Company. Soon a large number of tests were drilling for the producing horizon. The largest well to be found was the Amerada Petroleum Corporation and Tom Slick Oil Company's Deister 1, NEc SE Section 19-6-4e, also the farthest south well at that time. It produced better than 4000 barrels daily, but soon was cutting and showing a sharp production decline.

The producing area was limited to a very small region and more than half of the tests started in the territory were failures.

Mission Field

Early in February, Mission pool operators were ready to drill in with more than 60 tests, after having waited more than a year for permission to start them. The first 48 hours after restrictions were removed at Mission saw the drilling in of 35 producers and three failures, with the others following very shortly. Although the field flowed open for a period, despite the proration on Greater Seminole, its production never exceeded the 50,000-barrel daily figure.

Maud and Carr City Fields

During the early part of the year the Maud field, later divided into two pools, with the eastern part known as Carr City, was considered an important area. The producing horizon of the Maud field was the Hunton and Misener sands, with a little Simpson sand production, while at Carr City the Simpson and Wilcox sands were the producing formations. The producing area of the Maud field was much larger than that of Carr City. Production in Maud field was found to be very spotted. Water was troublesome in a number of new tests which defined the pool. The recovery of the field soon slumped.

A feature of the development was the Gypsy Oil Company's Miller 3, SEc NE SE Section 18-8-5. It encountered the Misener sand at 4026-30 feet and when drilled in had an output of 715 barrels the first hour, 827 barrels the second and later increased to better than 900 barrels per hour. This is the largest Misener sand well ever found and is one of the larger wells in the history of Oklahoma. The flow was so great that when an attempt was made to pinch it, a control head valve broke and the flow went on the ground. The first 24 hours under control, which was a few days later, it gauged but 8367 barrels of oil and 37,000,000 feet of gas. Its recovery continued to slump rapidly after that.

Although extended into new territory to the north and completely defined at once to the south, there was little spectacular activity in the Carr City pool. The existence of this pool was known previously, since the Barnsdall Corporation's Fife 1, Section 14-8-5, had been completed and pinched in until it thought it advisable to develop the field. It failed to materialize into the producing area expected of it.

Earlsboro Field

All of the older Seminole fields showed a steady production, with little activity and nothing of interest, with the exception of the Earlsboro field, which continued its past history by showing flashes of brilliant performances along the edge of production. Foremost among the new extensions was that to the southeast, including Sections 13 and 24-9-5 and 18-9-6. A number of huge producers were found

(Continued on page 172)

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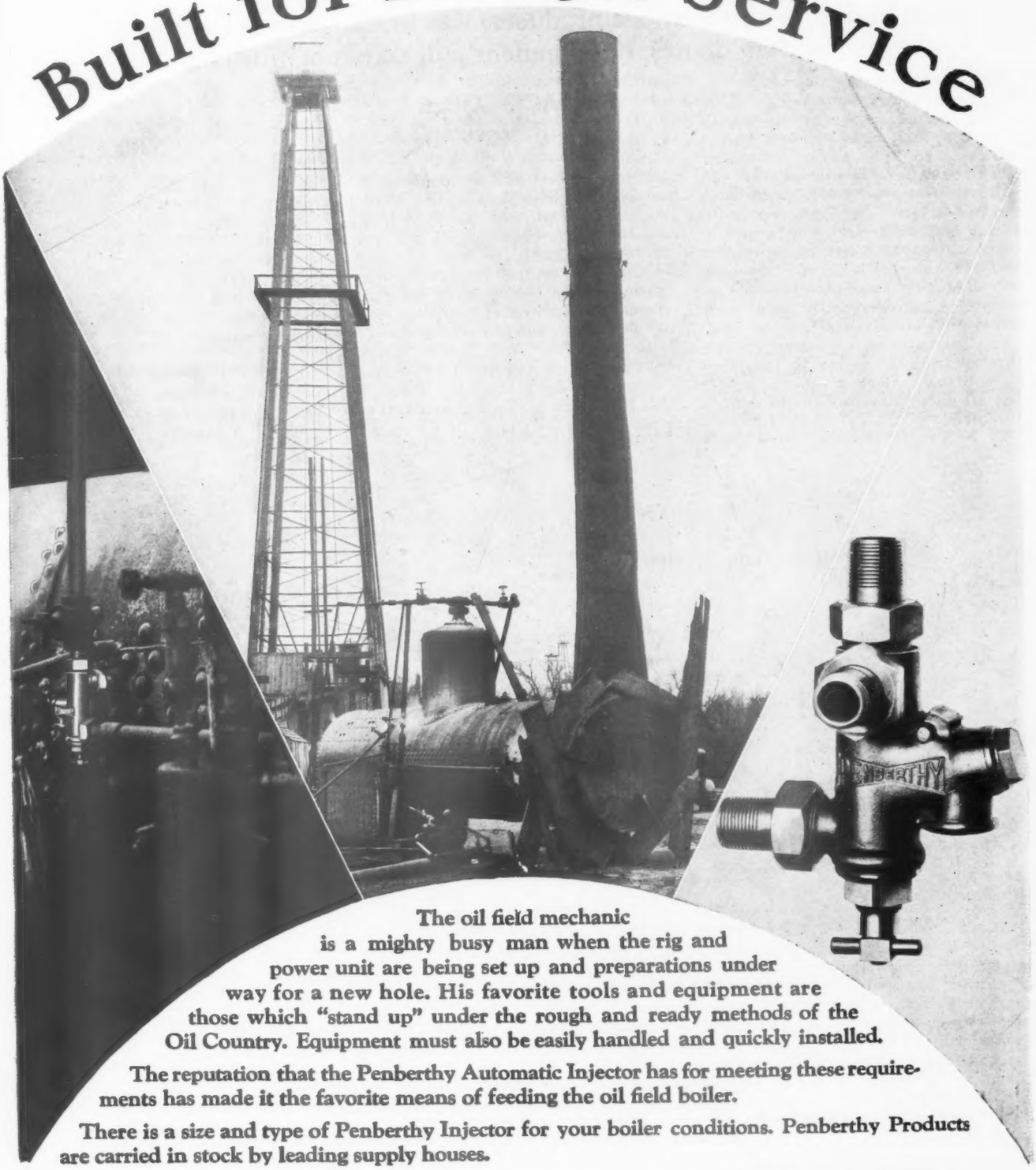

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Discovery of DEEP DOMES *Revises* GULF COAST *Potentialities*

Sugarland, now third largest producer, was first to really show possibilities of deep domes; development will take much drilling

By JACK LOGAN
Staff Representative

HOUSTON. — Although the Gulf Coast region of Texas and Louisiana has been producing oil for nearly 30 years, and has to its credit a total recovery of more than 700,000,000 barrels, it appears now to be only in an early stage of its ultimate development, considering the great number of salt domes and promising structures that have been revealed by geophysical methods during the past few years, to say nothing of other prospects that are sure to be brought to light in the future.

Before discussing the numerous discoveries that have been made with both the seismograph and the torsion balance since the beginning of this year, it would probably be well to give a back-ground for the remarks by presenting a brief review of earlier development of geophysical prospecting.

The torsion balance was introduced in the Gulf Coast in 1922 when Rycade Oil Corporation and Roxana Petroleum Corporation did preliminary work. In 1923 it was put to the first practical use when Rycade Oil Corporation used it to check the existence of Nash dome, which was already a good prospect by virtue of sulphur water and topographic indications. The first actual discovery credited to the torsion balance was Long Point dome, Fort Bend County, found in 1924 for Gulf Production Company by the North American Exploration Company.

First Seismograph Crew

The first seismograph crew was brought to the Gulf Coast for the Marland Oil Company. Soon afterwards

Gulf Production Company had three troops working in the Gulf Coast. A monopoly on the seismic work was held at that time by the "Seismos" G. m. b. H. of Hanover, Germany, directed by Dr. L. Mintrop. The Marland Oil Company and Gulf Production Company employed the "Seismos" troops for this early work. Moore's field (Orchard dome), found the latter part of 1924, is the first discovery credited to the seismograph. Long Point and Moore's field were the only geophysical discoveries in 1924 in the Gulf Coast.

During 1925 there were five geophysical discoveries: Allen and Clemens domes by torsion balance; and Hawkinsville, Fannett and Starks by seismograph. In 1926 Moss Bluff was the only dome revealed in the Texas Gulf Coast; but East Hackberry, Cameron Parish, and five domes in Iberville and adjoining parishes were discovered in South Louisiana in that year.

In 1927 there were about a dozen discoveries, all but three in the Louisiana division of the Gulf Coast. One of the three found in the Texas Gulf Coast was Sugarland, the discovery and development of which has to a large extent revolutionized geophysical work.

Sugarland First Condemned

Before the discovery well was completed at Sugarland, the producing companies were interested primarily and solely in shallow salt domes; and any anomilies, indicated by either torsion balance or seismograph, were passed over without any great effort to analyze them. Additional work for more shallow domes seemed more promising, and incidentally the rapidtiy of seismic work, as compared with torsion balance surveys, gave the seismograph preference in discovery work, while the torsion balance came to be used more as a checking instrument. In this mad rush of 1925 and 1926 for new shallow domes, Sugarland, which is now the third largest producing field of the Gulf Coast, was cursorily surveyed and condemned. Torsion balance work in 1925 indicated a condition suggesting a dome or structure of some kind, but that work was cut short before being completed, and the more rapid seismic work was substituted. Failing to find the usual shallow salt dome, the seismograph crew reported accordingly, and the prospect was passed up. In 1927 another company reported no dome present when a seismograph survey was made. Meanwhile H. C. Cockburn blocked leases on the strength of a torsion balance survey by the North American Exploration Company, and finally, after failing to interest various major producing companies, succeeded in making a deal with the Humble Oil & Refining Company for development. The history of the Sugarland field from that point on is well known. Humble Oil Refining Company's first test was an 800-barrel producer at 3536 feet, and although more than 20 wells have already been drilled, there has not yet been a failure. For several months the field has been producing over 11,000 barrels daily. The ultimate recovery, considering systematic development by a single company, has been estimated by a competent authority at 150,000,000 barrels of oil.

Geophysical Ideas Revised

The significant feature of the discovery and development of the Sugarland dome is its depth. All of the wells there are around 3300 feet deep, and they are evidently producing from the top of the dome. The summits of many of the old domes of the Gulf Coast rose to within a few hundred feet of the surface.

After the completion of the discovery well at Sugarland in March, 1928, there was a general revision of ideas in connection with geophysical work. Deep domes were then in demand, and besides more thorough work in absolutely virgin territories, the investigation came to include re-checking of areas which had been passed up in the first rush. In 1928, also, the first geophysical work was done over a large territory in the marshes, lakes and bays of the eastern part of the Louisiana Gulf Coast. And so a record number of geophysical discoveries were reported in 1928—the total exceeded 30, which was more than the total number found during the preceding four years. Thus by the end of 1928 there were around 60 prospective oil fields in the Gulf Coast that had been brought to light through geophysical prospecting, as compared with 41 salt domes and fields that were known prior to the introduction of geophysical instruments.

In 1929 the search for new potential oil fields has continued with zest, and a large amount of geophysical work is now in progress, although nearly every square foot of ground in the entire Gulf Coast has been worked at some time by some method and company. Furthermore, a great deal of exploration may be expected in the future, in further checking and re-checking of earlier work.

Sub-Surface Structures

Although most of those discoveries of 1928 were of the usual salt dome type of prospect, including some that will prove to be deep domes, like Sugarland, there were some among them which were not salt domes, but faults and structures. Looking for deep domes, the geophysicists also encountered these anomalies, and profiting by earlier experiences in which deep domes were passed over, they are in many cases reluctant to condemn these prospects of the new kind, lest they condemn prospects which may eventually develop into profitable Gulf Coast fields of a new, non-salt dome type.

Among these non-salt dome types of prospects revealed by geophysical methods in 1928 and in 1929 there are various examples of Miocene highs which may or may not prove eventually productive of oil. Whether or not

(Continued on page 204)

Why There Will Be No Oil Tariff

FAILURE of both houses of congress to approve the import tariff on crude oil is easy to understand when the underlying causes are analyzed.

In the first place, the proposed tariff does not comply with the doctrine of either of the two schools of tariff advocates into which the people of this country have been divided since the first congress met. At that time the country was confronted with the need for revenue which was the basic idea of the tariff. Immediately there was division as between those who wanted the tariff purely as a means of raising revenue and those who saw opportunity for protecting some industry by imposing import duties which would halt importations of commodities produced at home. Adherents of the two ideas formed the basis of the two great political parties which have existed throughout the history of the country, and in a measure continues until this day, although party lines are frequently broken when the interest of the several sections demand; for instance, democratic Texas does not object to a tariff on wool, and some firm democrats in Texas and elsewhere can see much virtue in a tariff on crude oil.

But study of the figures reveals that a tariff on crude would not, as its advocates fondly hope and often firmly believe, serve to relieve the situation of low prices for oil produced in the United States. Even more readily can it be shown that no revenue would be derived from the duty—the latter for the most obvious reason that imports would immediately stop. That is what the advocates of the tariff desire, but the benefits hoped for would not materialize, and the country as a whole would simply be loser.

Statistics on United States production and imports of crude oil show that the advocates of the tariff have a good case. But that is without considering exports of both crude and refined products. Taking all these statistics together, it is shown that exports are in excess of imports. If it were possible that foreign crude could be kept out and exports continued, the tariff would raise prices, but it can not be shown that such would happen. In fact it takes no logic to conceive that exports would stop as quickly as did imports.

What would happen would be that Canada and Japan who now get the bulk of American exports of crude, would get their supplies direct from South America, and the refining capacity in the United States which is now employed in supplying refined products for world markets would be closed down and replaced by refineries either in South America at the source of supply or in Europe close to the market. At least this business of manufacturing refined products for foreign markets from foreign crude would be stopped, and with it would go the pay rolls of the plants, tax revenue and all else connected with this commerce which the government is naturally inclined to foster.

Another important angle is that the government has interested itself in conservation of the domestic supply of petroleum and the conservation board has recommended that one means of conserving the home supply is to draw upon outside sources. Also the government itself is a large user of fuel oil and officials of the shipping board have shown that higher prices on that commodity as brought about by a tariff, would not be to the interest of American shipping. Incidentally a large part of privately owned American marine is represented by tankers.

Tariff advocates have always enlisted sympathy for their cause with the plea that free trade brings American workmen in competition with laborers of a lower scale of living. This has been mentioned in the case of oil, but not logically. The oil imported into the United States is produced by American capital employing American labor, American methods and American materials, each item costing more than in domestic fields because of location and conditions. The government is interested in such foreign operations of its nationals in all lines of business, aside from the particular interest it has in securing petroleum from foreign sources to prolong the domestic supply, as was pointed out above.

From the standpoint of the people in the oil business favoring and opposing the tariff on crude oil, the opposition has it. Advocates include a portion of the producers in the Mid-Continent and the whole army of royalty owners. Opposed to them are the stockholders and employes of the large companies producing the imported oil and refining it in their American refineries. Obviously the latter group far outnumbers the former and their interests get more consideration from an elected tariff making body.

Summed up, the tariff failed because its imposition would stop imports without benefit to domestic producers. It would force American refining plants to move to foreign locations. It was advocated by a relatively small group within the industry and opposed by conservationists and those large interests which are producing and importing the oil.

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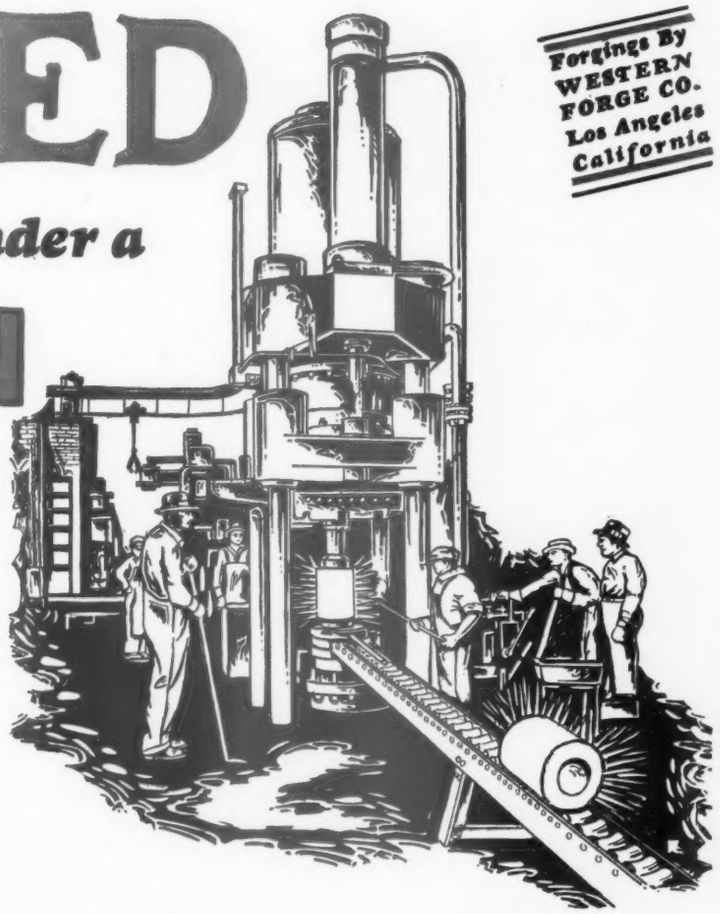
(by process known as extruding)

Forgings By WESTERN FORGE CO. Los Angeles California



EMSCO TOOL JOINTS

The use of extruded forgings has overcome the trouble with pin breakages which was occasionally reported on joints made from rolled stock. Such breakages were attributed to imperfections, seams or "pipes" in the rolled stock; therefore, tool joints made from extruded forgings are to be preferred.

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EMSCO STEEL EQUIPPED WELLS ARE SAFE

(THIS IS THE FOURTH OF A SERIES OF ADVERTISEMENTS FEATURING THE EMSCO PROCESS OF MANUFACTURE OF TOOL JOINTS)

Four Tests Drilling to Deep Big Lake Sand

Special heavy equipment used in orderly drilling of offsets to light oil producer in the Big Lake Field

By WALLACE DAVIS
Staff Representative

WITHIN the bounds of Big Lake field, where electric units are substituting for pressure that has gone from the regular production horizons, four modernly equipped outfits are pounding away at the world's deepest known oil reserve. They may establish the discovery made by Texon Oil & Land Company's University B-1 at 8523 feet as a valuable field covering sizeable proportions. They may limit its possibilities by condemning as many locations in its proximity. But even in the latter event this well-rounded-out program of deep exploration by Big Lake Oil Company will be a tribute to the progress of modern drilling.

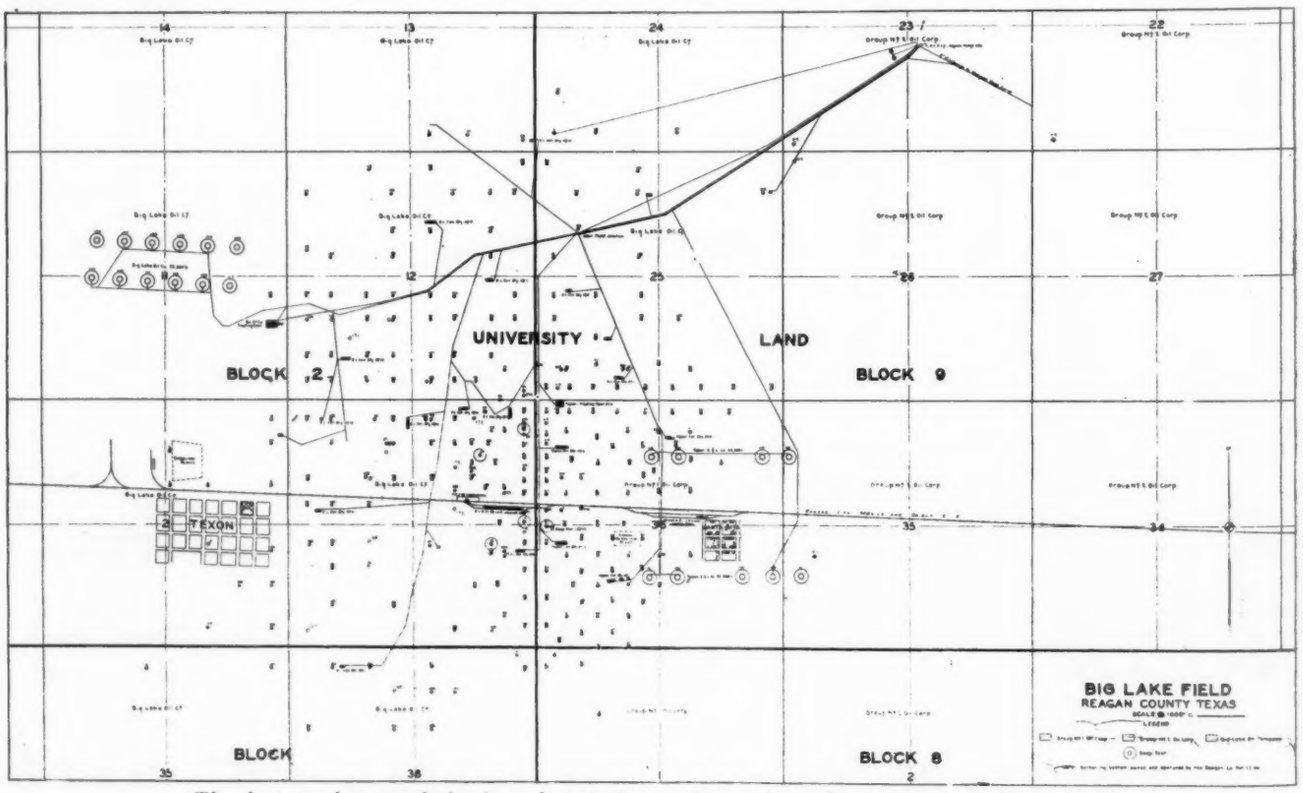
On July 15 Big Lake Oil Company's Santa Rita (University land) 131, the deepest of the four, landed 7806 feet of five-inch, 18-pound casing, thereby hanging up a new record for casing string lengths outside of California. Richmond Drilling Company of Big Lake, contractors on this hole, which is a cable tool job, started drilling deeper February 18, at 2909 feet, where it formerly produced from the regular Texon lime. Actual drilling time since deepening was started amounts to less than five months, another feat of no mean proportions. Santa Rita 131 had an initial yield of 270 barrels at its shallow depth, and was pumping 150 barrels when killed to make the deep test. The three other deep tests now under way were started as new holes. They are: Santa Rita 2-C, a rotary test, and 1-C and 151, cable tool operations.

Five strings of casing now set and cemented in No. 131 are tied together at the top with Regan Forge & Engineering Company casing heads. The two long strings in this well were floated into the hole by use of Baker float shoe and float collar to prevent excessive weight necessary in lowering such strings by the regular method. The following table gives the casing record on No. 131:

Casing Record

Length	Size	Weight	Total Weight
450 feet	15½-inch	70	31,500
1100	12½-inch	50	55,000
2600	10	45½	118,300
3524	8¼	32	112,768
6251	6⅝	26	162,526
7806	5	18	140,508
Total			620,602

In its deep drilling program Big Lake Oil Company has its sights on another accomplishment in casing settings which will establish another record east of the Rocky Mountains. This is the casing program laid out for Santa Rita 1-C, which is now drilling slightly below 3000 feet, and which will have 1,138,160 pounds of casing in the hole in six strings before reaching the production horizon in the field. Below



The deep producer and the four deep tests are shown along the line between Block 2 and Block 9 by circles around the location.

Thanks -- Mr. Sanford!

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INCORPORATED
910 JOHNSON STREET
PHONE NO. 979
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March 16, 1929.

Lufkin Foundry & Machine Company,
Lufkin, Texas.

Attention: Mr. A. E. Oudlipp,
Sales Manager.

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We take pleasure in saying to you that our experience with Lufkin Units has been and is extremely satisfactory and we have found their performance both very dependable and highly efficient.

Yours very truly,

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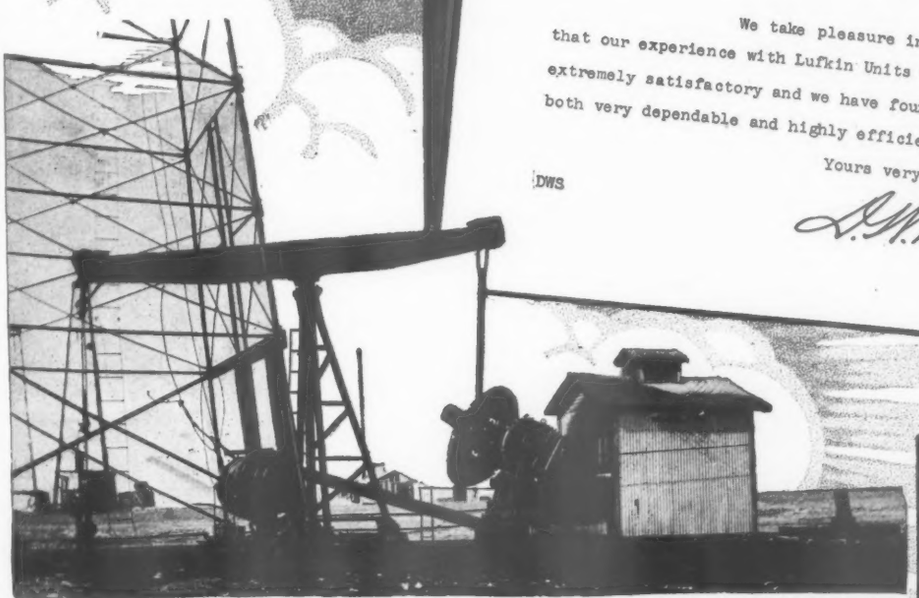
A. W. Sanford

DORA ROBERTS No. 4
Howard County, Near Big Springs, Texas
LUFKIN: 5½" Unit
No. 22 Hoist
Pole
Front Pitman



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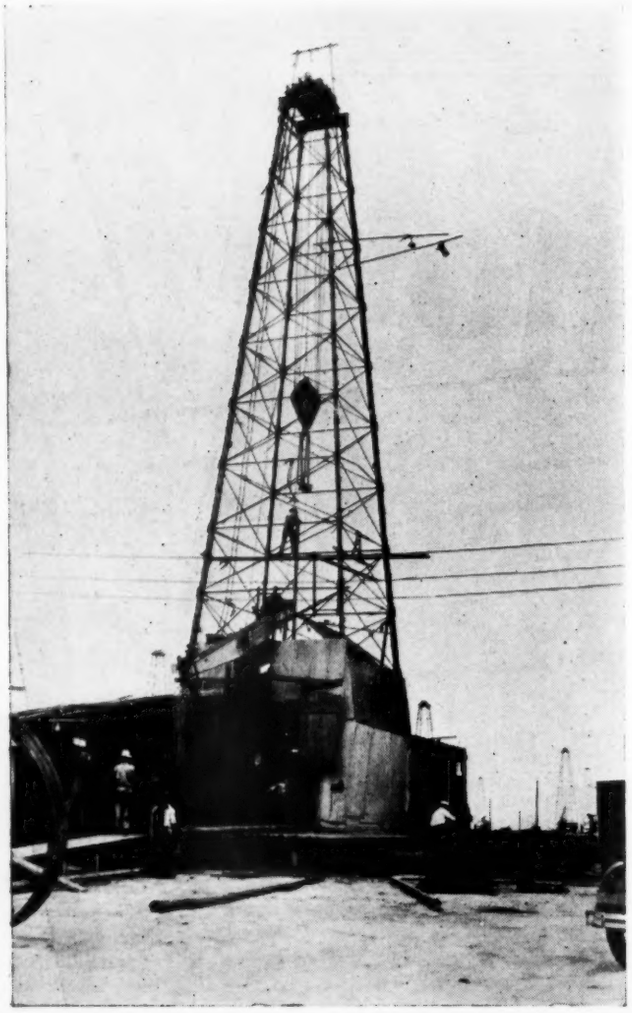
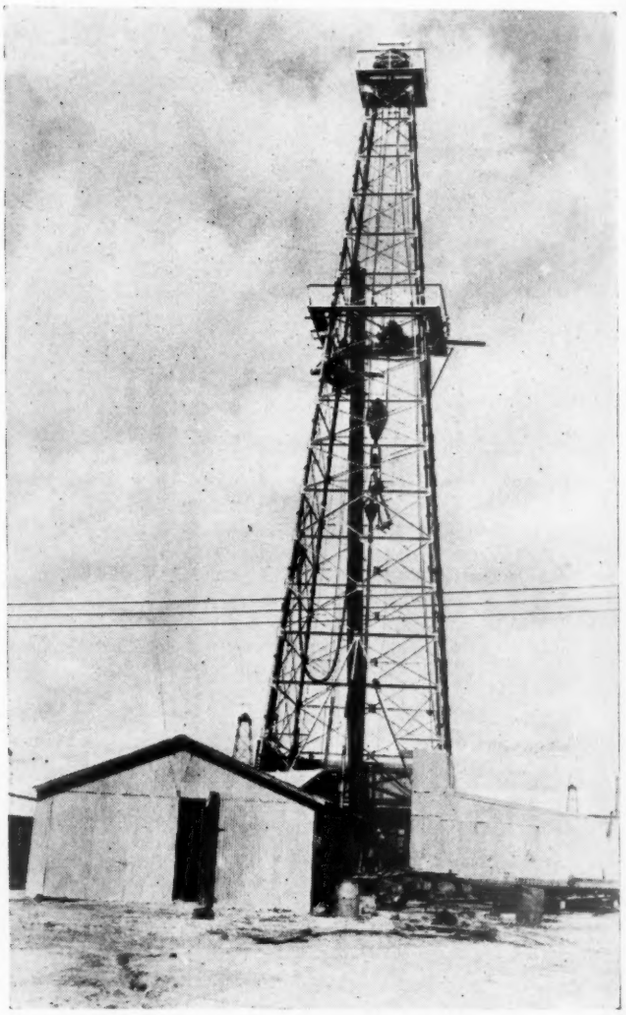


Above is the Big Lake Oil Co.'s Santa Rita 131, an 8500-ft. cable tool test at Texon. Note the heavy duty hook-up of the four-sheave traveling block carrying nine lines, and the heavy duty casing elevator with 1¼-inch links.

Below is the Big Lake Oil Co.'s Santa Rita 2-C, 8500-ft. rotary test at Texon with a Moore derrick of special steel legs and relegs.



is shown these six strings, the first three of which are already set:

Feet	Size	Weight	Total Weight
560	22	113	63,280
840	18⅝	87	73,080
2650	16	84	222,600
3700	11¾	55	204,000
6800	9	50	340,000
8400	6⅝	28	235,200
Total			1,138,160

The size of the upper strings in this hole have been increased due to plans of the company to complete with a dotary rig.

Santa Rita 151, the third cable tool, was drilling July 19 at 2970 feet after setting 2960 feet of 8¼-inch, 32-pound pipe. It was spudded August 1, 1928. Seventy-pound, 15½-inch surface casing was set at 550 feet; 50-pound, 12½-inch was set at 1080 feet, and 40-pound, 10-inch casing was set at 2580 feet in this hole.

Extra Heavy Equipment

The type of special, extra heavy or oversized equipment in use on No. 131 is representative of the equipment being employed on the three cable tool wells, and a brief explanation of its hook-up will fairly describe the three outfits.

An 81-foot Lee C. Moore tubular derrick of regular specifications, except that the floor and sills are specially braced, is being used. An Emsco Derrick & Equipment Company five-beam roller bearing crown block and manganese steel pulleys are used, and the crew is running nine lines with a four-sheave traveling block instead of the customary seven lines with the three-sheave block. A spider and slip on the floor with a one-collar Wilson elevator, extra heavy with 1¼-inch links, and a 1⅛-inch casing line instead of the regular one-inch, reveal the difference from the average cable outfit. The straight ⅞-inch mild plow steel lines are used in drilling, while special oversized spooling flangs made for the bull wheel to handle the 8500 feet of cable are employed. The sprockets and chains have manganese steel instead of cast iron and steel, respectively. Extra heavy 1⅛-inch shafts in the bull wheels and calf wheels are used as compared with ½-inch or ⅝-inch shafts in ordinary drilling. Quadruple tugs instead of only two tugs are used on the bull and band wheel. Two 14-inch brake wheels are employed on the bull wheel instead of one 12-inch brake.

Power for drilling these four deep holes as in pumping and working over wells in the shallow horizons, is purchased from the Pecos Valley Power & Light Company off a high line. Big Lake Oil Company's Santa Rita 131 is powered with two Westinghouse motors, 25-65, as compared with the ordinary drilling size of 15-35 horsepower.

Santa Rita 131, due for completion in the deep sand within the next few months, will be equipped with four four-inch flow lines on the Christmas tree, using fittings testing 4000 pounds pressure. A show of oil was encountered in this hole at 6284-99 feet but did not justify a test, especially with the 8523-foot production as

(Continued on page 226)

VEZ

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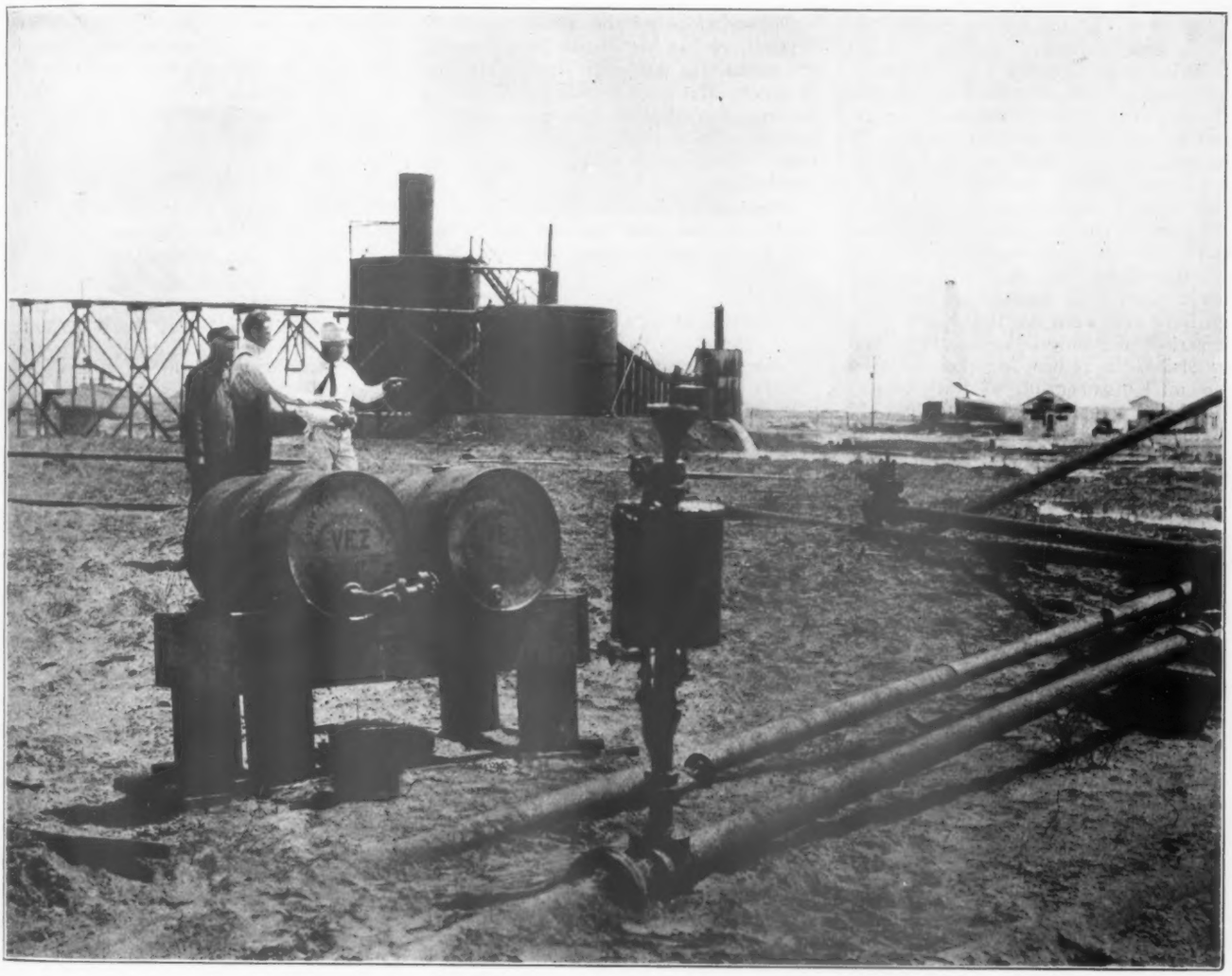

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Luling, Texas
Big Spring, Texas
Wink, Texas
Pampa, Texas
Benavides, Texas
El Dorado, Arkansas
Seal Beach, California

West Texas Operators Complete 1007 Wells During Year

Drilling over wide area gives record of 70 per cent success and 30 per cent failure; little cooperative work on wildcats

By H. H. KING
Staff Representative

WEST Texas experienced its banner year on drilling during the past 12 months, having added 709 producing wells and 298 dry holes, making a total of 1007 completions. Successful completions from the past year's efforts of drilling crews amounted to 70 per cent. of the total, thus leaving about 30 per cent. failures that were mostly located in rank wildcat areas.

The wildcatters kept their machines and rotary and cable rigs running on a large scale throughout the past year to give the district the largest number of dry holes that have ever been completed in a similar period, with only 17 successful oil and gas strikes in return for their efforts. The total number of wildcat failures drilled and completed within the past 12 months is placed at 256, thus leaving 42 failures located within and on the edges of established fields and pools. The percentage of successful wildcat strikes made in the district for the past period is slightly above 6 per cent. of the total completed.

Forty counties, having an aggregate area of 59,978 square miles, shared in the 298 failures completed in the district within the past year, and on this basis it can be readily seen that only a small percentage of the area was eliminated from the prospective oil and gas producing list by the recent crop of dry holes. Of the above counties that participated in wildcat completions during the past year, 18 are on the active production list with an aggregate of 2348 pumping and flowing wells that are now averaging slightly in excess of 400,000 barrels of oil daily. However, proration restrictions are in effect in Pecos, Winkler and Howard Counties.

In analyzing the West Texas dry hole crop for the past year from a statistical standpoint, it is of interest to note that the total footage of hole drilled in the 298 failures amounts to 879,112 feet, or an average depth of 2950 feet per hole.

Work Costly.

Figured on a basis of $10 per foot to cover cost of actual drilling, and casing the hole it is to be assumed that in excess of $8,000,000 was spent on this exploration work. However, a much greater sum was spent for geological work, and the purchasing of leases and royalties around each operation. Since major companies as a whole displayed a disposition to discourage wildcatting in West Texas during the past year by refusing financial support through lease purchases from the general run of independent wildcatters, a high percentage of the above estimated expenditure has been borne by independent companies and individual operators. However, the majors did not overlook opportunities to buy protection acreage against wildcats that had particular merit from a production trend, or geological standpoint.

Although dry holes are often disastrous to the oil companies' treasury and to the individual's bank account, they have their good points also in helping to locate new producing areas by the tests that follow. This condition is particularly true in West Texas, and each year's toll of wildcat failures aid in the search for possible producing areas through the geological information obtained.

Geological Information.

Included in the group of wildcat failures drilled within the past year, are quite a few that encountered favorable

SUMMARY WEST TEXAS FAILURES PAST TWELVE MONTHS

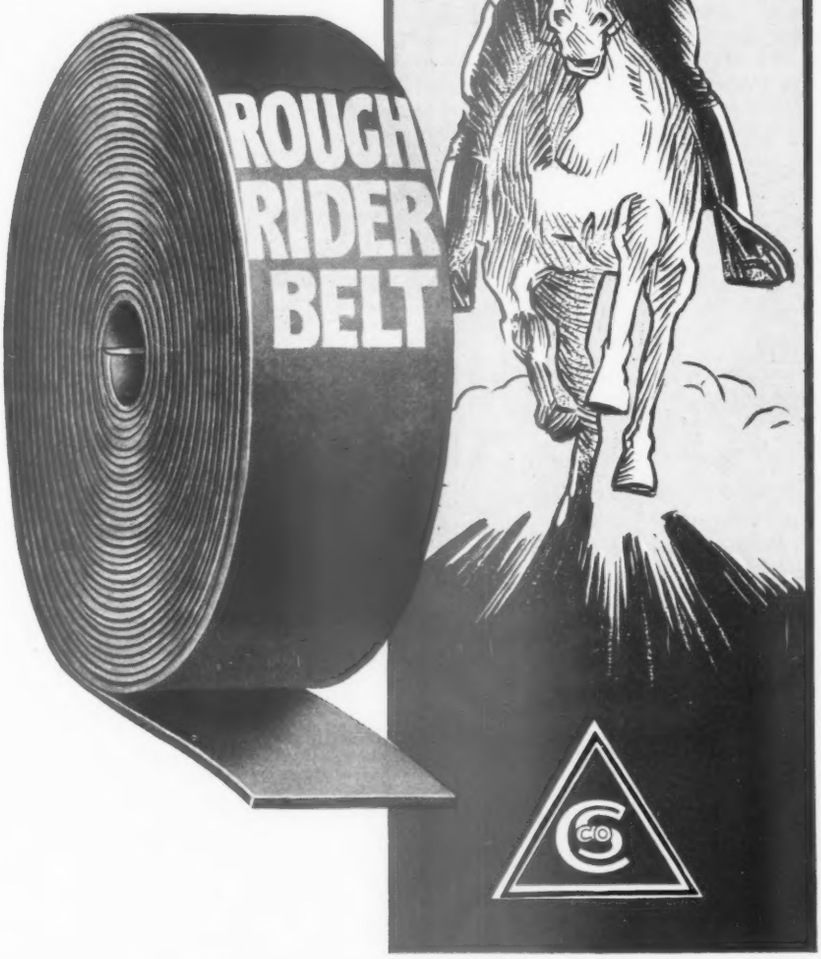
Recapitulation of dry holes completed in the West Texas district during the past 12 montms is given below by counties, with the number of failures segregated according to depths:

	Under 1000 Feet	Bet'n 1000 & 2000 Feet	Bet'n 2000 & 3000 Feet	Bet'n 3000 & 3500 Feet	Bet'n 3500 & 4000 Feet	Bet'n 4000 & 4500 Feet	Bet'n 4500 & 5000 Feet	Below 5000 Feet	Totals
Andrews	..	..	..	..	..	..	3	..	3
Borden	..	..	..	1	4	..	..	..	5
Brewster	1	2	1	..	..	..	..	..	4
Coke	..	..	1	..	1	..	..	..	2
Concho	..	2	2	..	1	..	..	..	5
Crane	..	..	2	..	2	..	..	..	4
Crockett	..	9	6	2	..	..	..	..	17
Culberson	..	3	..	..	..	..	..	..	3
Dawson	..	..	..	..	..	1	..	..	1
Edwards	..	..	1	..	1	1	..	..	3
Fisher	..	2	2	7	5	..	..	..	16
Gaines	..	..	..	..	..	1	..	..	1
Glasscock	..	..	..	3	7	..	..	..	10
Tom Green	2	4	..	1	..	..	..	..	7
Howard	..	..	2	7	3	3	..	..	15
Irion	1	7	5	2	2	..	..	..	17
Jones	..	2	23	9	..	..	..	..	34
Kent	..	..	..	..	1	1	..	..	2
King	..	..	..	..	..	1	1	..	2
Lynn	..	..	..	..	1	..	..	..	1
Martin	..	..	..	..	..	1	..	..	1
Menard	1	1	1	3	..	..	..	..	6
Midland	..	..	..	..	..	..	2	..	2
Mitchell	5	2	3	1	..	1	..	..	12
Nolan	..	..	..	2	1	..	..	..	3
Pecos	..	28	11	1	1	2	1	..	44
Presidio	1	1	..	..	..	..	..	1	3
Reagan	..	..	..	6	..	..	..	..	6
Reeves	1	2	..	..	1	..	..	1	5
Runnels	..	3	7	2	2	2	..	..	16
Scurry	..	..	..	..	..	1	..	..	1
Sterling	..	..	1	2	1	..	..	..	4
Stonewall	..	..	..	1	1	..	..	..	2
Sutton	1	1	..	..	..	..	1	..	3
Taylor	..	..	5	2	..	..	..	..	7
Terrell	..	..	..	..	1	..	..	..	1
Terry	..	..	..	..	..	..	..	1	1
Upton	..	..	5	..	1	..	..	..	6
Ward	..	..	2	..	..	..	1	..	3
Winkler	..	..	1	16	2	1	..	..	20
Totals	13	69	81	68	39	16	9	3	298
Totals previous 12 months	11	42	60	48	52	18	6	6	243
Totals year ending July, 1927	4	27	69	74	57	21	6	3	261

ROUGH! TOUGH! NEVER GET ENOUGH!

(The battle cry of the Rough Riders)

Rough Rider BELT



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showings of oil and gas, but passed up same in hopes of having better luck at a lower depth. These tests are to be directly responsible for more exploration work in the immediate area, and can be counted upon to later result in the establishment of producing oil and gas fields, as has been the case in previous years.

Culberson, Menard, Andrews, Taylor, Reeves, Sutton, Presidio and other non-producing counties made a threat to break into the production list during the past year through favorable showings, or actual production encountered and passed up by wildcatters only to be later abandoned as failures.

In Culberson County, the joint test of the Deep Rock Oil Company and the Grisham-Hunter Corporation on the Dettis land, Section 28, Block 59, flowed 10 barrels per hour of 36.8 gravity oil at 1483-88 feet, late last July, and the oil exhausted after flowing more than 300 barrels natural. This wildcat was deepened to 1720 feet and abandoned. The Panhandle Refining Company and associates' wildcat test on the G. P. Eckhardt land placed Menard County in the spotlight when 15 barrels of 37-38 gravity oil was swabbed and bailed daily from sandy lime horizon at 2967-3008 feet, last September. This test developed water trouble, and was deepened to 3225 feet before plugging. Another try for production on this block is now under way.

Andrews County has made several threats to enter the oil production list from the deep lime horizon, and live oil was encountered in the two wildcat tests drilled and abandoned by the Deep Rock Oil Company on the W. J. Harris and D. J. Hostetter ranches. Because of these favorable showings, the above concern succeeded in working up a unit plan that will result in the drilling of two more tests to the 4200-4500-foot lime. Mid-Continent Petroleum Corporation's wildcat test on the Fisher ranch developed a small quantity of live oil from lime at 4650-58 feet, followed by sulphur water at 4670-74 feet, but is now plugging back to make a test and abandon the hole.

Taylor County had a short lived pumper early this year when the Mid-Continent Petroleum Corporation's J. H. Taylor 1, Section 18, Gaudalupe County School Lands survey, made 10 barrels of oil and much water at 2445-50 feet, with a total depth of 3007 feet. The volume of water gained, and made pumping of this wildcat producer non-profitable, so the hole was plugged and a new test started on the same block.

Reeves County made a bid for a place on the oil map last April when the wildcat test of the Penn Oil Company et al showed live oil and a column of water in sandy lime at 5175-78 feet. This test was carried to 5612 feet and abandoned without a shot. Southern Crude Oil Purchasing Company's Allison Ranch 1, Sutton County, encountered a show of gas and a little 34 gravity oil at 3529 feet, followed by more gas at 3570 feet and 4640-45 feet, but quit with a hole full of salt water at a total depth of 4950 feet. The Presidio County wildcat test of the Brite Production Company on the L. C. Brite ranch, Section 50, Block 12, GC&SF Ry. survey, encountered a sufficient show of oil in sandy lime at 4070-4150 feet to justify a 300-quart shot after plugging

(Continued on page 226)

Tabulated Report of Dry Holes Drilled in West Texas on Page 94

WEST TEXAS DISCOVERY WELLS

Discoverer and Lease Name—	Elev.	Top Salt	Top Lime	Prod. Horizon	Total Depth	Date Completed	Init. Prod.	Present Prod.	Gravity
CONCHO COUNTY									
Arkansas Fuel Oil Co. (now Arkansas Natl Gas Corp.'s) S. A. Hartgrove 1	1667	....	....	1110-1140	3236	5-20-27	1 Mil gas		shut in
CRANE COUNTY									
Taylor-Hughes Field									
Independent-Turman & Maxwell (now Independent Oil & Gas Co.'s Len Taylor-Sapp 1	2474	450	2030	2038-2045	2045	2-24-26	140	15	28-30
Church & Fields Field									
Church & Fields et al (now Magnolia Petroleum Co. et al's University 1	2601	1145	2925	3038-3040	3040	4-19-26	190	14	30-32
Gulf-McElroy Field									
Gulf Production Company's J. T. McElroy 1	2592	1000	2661	2728-2833	2833	7-21-26	600	175	30-32
Gulf-Waddell Field									
Gulf Production Company's W. N. Waddell 2	2744	1170	3068	3194-3500	3519	8- 4-27	30	14	32
CROCKETT COUNTY									
World-Powell Field									
World Oil Company (now Humble and Continental) L. P. Powell 1	2809	1173	2572	2644-2647	2647	6- 8-25	25	20	28-30
Shaffer-University									
Wm. Shaffer-Cerf et al's University 1	2639	1030	....	2175-2195	2368	12-10-26	10	abn	27-28
Todd-Cooke									
J. C. Cooke et al (now The Texas Company's J. S. Todd 1	2672	1038	....	1695-1705	2102	4-24-26	1 Mil gas		shut in
Donnelly-Shannon									
W. W. Donnelly et al's J. M. Shannon 1	2486	....	....	1664-1680	1759	10-16-27	10 Mil gas		shut in
Moncrief-Massie									
W. A. Moncrief et al's R. Massie 1	2502	....	....	1417-1441	1450	Testing on pump			30-31
ECTOR COUNTY									
J. S. Cosden (now The Texas Company and Cosden Oil Co.'s W. E. Connell 1-A	2847	875	3170	3465-3482	4002	12-28-26	40	SD	35-36
FISHER COUNTY									
Royston Field									
The Texas Company's Dan W. Stephens 1-A	1937	....	3190	3238-3275	3275	1-17-28	280	45	38-39
GARZA COUNTY									
B. V. Blackwell et al (now Emerald Company's J. M. Boren 1	2358	470	1625	1970-2002 2417-2449	2600	5- -26	5	3	37-38
GLASSCOCK COUNTY									
Marland and Texon's W. R. Settles 1	2646	....	2030	1235-1298	3504	3- 8-27	200	185	32-33
World-McDowell Field									
World Oil Company's L. S. McDowell 1-C	2530	....	2260	2351-2398	2398	4-28-29	250	70	27-28
HOWARD COUNTY									
Chalk Field									
Owen-Sloan et al (now Magnolia Petroleum's) Otis Chalk 1-A	2430	....	....	1578-1583	1586	4-18-26	70	10	31-32
Clay-Hyer Field									
Fred Hyer et al (now Continental Oil Co.'s) H. R. Clay 1	2630	....	....	1542-1562 1780-1794	1794	11-21-25	50	11	31-32
Roberts (deep) Field									
Magnolia Petroleum Co.'s Dora Roberts 1	2662	....	....	2956-2968	2990	10-24-27	3300	515	27-29
O'Daniel Field									
Choate-Henshaw et al (now Magnolia Petroleum Co.'s) M. H. O'Daniel 1	2232	....	1670	2640-2705	3103	5-12-26	65	10	29-30
Hyman Field									
Magnolia Petroleum Co.'s Minna Hyman 1	2370	....	....	1308-1317	1317	6-17-29	20	10	29-30
Lockhart-Scott Field									
Lockhart & Company's W. T. Scott 1	2359	....	....	2740-2820	3220	12-27-26	20	4	29-30

(Continued on page 92)

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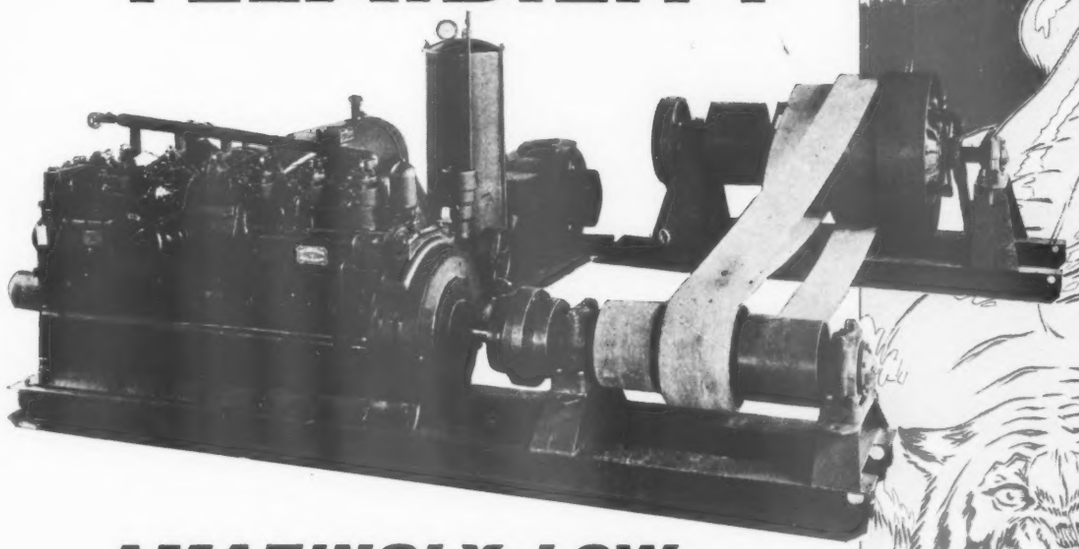

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West Texas Discovery Wells—Continued

Discoverer and Lease Name—	Elev.	Top Salt	Top Lime	Prod. Horizon	Total Depth	Date Completed	Init. Prod.	Present Prod.	Gravity
Settles-Henshaw Field									
Henshaw Oil Corporation (now American-Maracaibo Co.'s) W. R. Settles 1-A	2708	....	2001	2208-2232	2248	8- 7-28	4200	860	32-33
Harding Field									
Continental and Group No. 1 Oil Corp.'s J. B. Harding 1	2502	1146	3115	3173-3188	3230	5- 5-27	140	12	28-29
Reed Field									
Gibson-Johnson et al's H. N. Reed 1	2323	....	1910	2703-2708	2975	Testing on pump			
IRION COUNTY									
Moore and Kennedy (now Irion Oil Co.'s) Tankersley 1	2283	....	....	1341-1344	1344	7-22-28	15	SD	37-38
JONES COUNTY									
Noodle Creek Field									
Phillips Pet. Co.'s Joe Winters 1	1908	....	2493	2518-2527	2527	9- 5-26	1000	50	39-40
Smith-Tiner Field									
Hutson-Weaver and Shaheen (now Robert Oil Corp. et al's A. T. Smith 1-A	1824	....	....	2498-2533	2533	1-20-28	75	25	39-40
Higgs Field									
Stebbins O. & G. Co. (now Roeser-Pendleton & Stebbins' J. M. Higgs 1	1624	....	....	1599-1611	1615	4-22-27	25	5	39-40
LOVING COUNTY									
P. V. Petroleum Co. (now Lockhart & Co.'s J. J. Wheat 1	2645	772	....	4212-4272	4272	9- 1-25	25	20	38-40
MITCHELL COUNTY									
Westbrook Field									
Underwriters Prod. & Ref. Co. (now The California Co.'s) T&P-Abrams 1	2122	....	1540	2350-2498 2980-3020	3050	10- -20	25	10	24-26
Iatan Field									
Magnolia Petroleum Co.'s Mary Foster 1	2342	....	1750	2858-2872	2872	8-18-25	150	15	29-31
Ellwood Field									
Simms Oil Company's I. L. Ellwood 2	2237	....	....	598- 606	606	3-29-29	4½ Mil gas shut in		
PECOS COUNTY									
Yates Field									
Mid-Kansas & Transcontinental Oil Co.'s I. G. Yates 1-A	2396	....	965	995-1005 995-1150	1105 1150	10-30-26 8- 9-28	350 50,000	600	28-30
Kimberlin and Texon (now Texon Oil & Land Co.'s) I. G. Yates 1	2250	460	....	1268-1273	1300	2- 8-27	15	5	29-30
Bennett Field									
Quinby Oil Co. (now McCarty Oil Co.'s E. W. Bennett 2	..	....	....	1196-1230	1457	1- -27	25	10	38-39
Pecos Valley Field									
Pecos Valley Oil Co. (now Pecos Crude Oil Purchasing Co.'s) Pecos Valley fee 1	2501	1115	....	1626-1637	1637	11-20-28	120	25	34-36
White-Sellman Field									
Alexander-Lyles-Eastland Oil Co.'s White-Baker 1	2672	814	1602	1611-1626	1656	11-24-28	3½ Mil gas shut in		
University Field									
Geo. H. Anderson-Tower & McKanna's University 1	2801	1030	1690	1960-1963	1998	1-20-29	7¾ Mil gas shut in		
Taylor-Link Field									
Taylor-Link Oil Co.'s University 1	2510	835	1375	1613-1628	1628	6-20-29	130	125	30-31
Courtney-Pryor Field									
Phillips Pet. Company's Courtney-Pryor 1	2951	....	....	1345-1375	2150	5-22-29	150	Drl	25-26
Buell-Hagan Field									
Buell-Hagan et al's University 1-B	2760	945	....	1320-1332	1332	6-22-29	15	10	28-29
REAGAN COUNTY									
Big Lake Field									
Texon Oil & Land Co. (now Big Lake Oil Co.'s) University 1	2724	....	2935	3020-3028	3028	5-28-23	80	10	37-39
Big Lake (Deep) Field									
Group One Oil Corp. (Texon's) University 1-B	2733	1110	2780	8500-8523	8523	12- 1-28	500	2700	56-57
Skelly-Utah Field									
Skelly Oil Company and Utah Southern's University 1	2874	1340	3065	3136-3154	3157	2- 6-28	40	25	32-33
RUNNELS COUNTY									
Mud Creek Field									
Ladd-Hill-Sillix et al (now Vacuum Oil Co.'s) R. M. McMillian 1	1726	....	....	2535-2540	2540	8-30-27	200	3½	42-44
King Field									
Robt. Watchorn et al's J. L. King 1	1660	....	....	3475-3485	3732	5- 3-28	3 Mil. gas open		
SCURRY COUNTY									
Loutex Corporation (now The Northwest Co.'s J. J. Moore 1	2314	....	1580	1765-1820	3576	11-29-23	50	4	28-29
STERLING COUNTY									
H. D. Rummel et al (now J. P. Williams et al's) L. T. Clark 3	2337	....	....	1173-1175	1175	6-..-26	20	SD	31-32
UPTON COUNTY									
McCamey Field									
Johnson-McCamey-Marland (now Republic Prod. Co.'s) M. L. Baker 1	2613	590	2083	2161-2200	2271	9-30-25	70	6	27-30
Wentz-Shirk Field									
Wentz Oil Corp.'s Milton Shirk 1	2722	695	2146	2272-2331	2331	9-30-26	250	30	26-27
VAL VERDE COUNTY									
O. O. Owens et al's H. Y. J. Mills 1	2130	....	....	2491-2520	3214	6-29-27	3 Mil gas (dd)		
WARD COUNTY									
Shipley Field									
Shipley Oil Corp.'s S. F. Hayzlett 1	2502	727	2380	2480-2506	2506	11- 2-28	125	100	35-36
Prairie-Sealy Field									
Prairie Oil and Gas Co.'s John Sealy 1	2666	1073	3110	2526-2575	3505	11-22-28	5 Mil. gas open		
Gulf-O'Brien Field									
Gulf Production Company's G. W. O'Brien 4	2657	1290	....	2600-2631	2631	4-12-29	1500	870	38-39
WINKLER COUNTY									
Hendrick Field									
R. A. Westbrook & Co. (now Southern Crude Oil Purchasing Co.'s) T. G. Hendrick 1-A-T-67	2806	1930	2604	2965-3011	3049	11- 8-26	400	65	28-30
Scarborough Field									
Llano Oil Co.'s (now Shell Pet. Corp., and Llano Oil Co.'s) W. F. Scarborough 1	2943	1115	2953	2992-3347	3447	7-22-27	40	40	35-36
Leck-Daugherty Field									
Gibson-Johnson & Kessler-Logan (now Atlantic Oil Prod. Co. and Kessler-Logan's) Daugherty 1	2883	1980	2687	3159-3164	3167	5- 9-28	4000	400	28-30
Bolin Field									
V. T. Bolin & Company's Brown-Altman 1	2847	1302	....	2745-2812	3211	7-19-28	25	6	36-37
Richardson-OBrien Field									
SidRichardson-Kelsey et al's O'Brien et al 1	2722	2035	2648	2805-2975	2975	10-15-28	2100	194	28-30
Bashara Field									
M. J. Bashara's Fee 1	2883	....	2450	2481-2483	2483	5- 5-29	19 Mil. gas shut in		

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CONTINENTAL

West Texas Dry Hole Record for the Past Twelve Months

ANDREWS COUNTY

Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
Deep Rock Oil Co.'s W. J. Harris 1, c se¼ sec 12, blk A-46, P.S.L. sur	3172	1705	4005	4688	9-28-28
Deep Rock Oil Co.'s D. J. Hostetter 1, 330 ft from nw cor se¼ sec 20, blk A-46, P.S.L. sur	3224	1890	4297	4604	4-30-29
Mid-Continent Pet. Corp.'s M. M. Fisher 1, 1320 ft n & 200 ft e of sw cor sec 5, blk "A-36," P.S.L.	3192	1720	4275	4674	7-14-29

BORDEN COUNTY

Condor Pet. Co.'s E. A. Hall 1, 1650 ft from ne cor sec 5, blk 32, T&P Ry sur T-3-N	2601	1235	2969 3030	3820	1-21-29
E. L. Doheny Jr. et al's J. J. Koonsman 1, 330 ft from nw cor sec 2, blk 2 T&NO Ry sur	2427	915	2430	3791	12-12-28
H. F. Gibson & Johnson's J. M. Higginbotham 1, c of s line sec 8, blk 31, T&P Ry sur T-3-N	2432	1135	2870 2920	3755	6- 3-29
Frank M. Greene et al's C. C. Slaughter 1, c sw¼ sec 32, blk 31 T&PRy sur, T-3-N	2521	1222	3040	3414½	5- 7-29
C. Ed. Hyde et al's H. B. Beal 1, c ne¼ sec 14, blk 31, T&P Ry sur, T-3-N	2361	1105	2700	3602	5- 8-29

BREWSTER COUNTY

Ed. W. Bateman & Co.'s R. L. Nevill 1, 1280 ft from w &1920 ft from s lines sec 64, blk 13, GH&SA Ry sur	3950	....	....	1973	5-16-29
E. L. Chapman et al's — — Skinner 1, c sw¼ ne¼ sec 100, blk 2 GC&SF Ry sur	4990	....	....	1550	4-15-29
Yates Pool Developing Synd's Kimball 1, c se¼ sec 204, blk 9, GH&SA Ry survey	4065	....	....	2265	11- 8-28
Clayton Williams et al's J. M. Poncey 1, 459 ft n and 1062 ft w of se cor sec 26, blk 214, T&StL Ry survey	....	....	....	500	2- -29

COKE COUNTY

W. C. Cates & J. S. Dennis' J. R. Mims 1, 2500 ft n and 300 ft w of se cor sec 47, blk "W", T&P sur	2300	812	....	2004	6- 5-29
Louisiana Oil Ref. Co.'s Powers 1, 735 ft n and 330 ft e of sw cor se¼ sec 157, blk 2, H&TC Ry sur	2040	....	....	3777	2- 6-29

CONCHO COUNTY

Douglas Oil Co. and .... Whitesides' A. Harrell 1, 3200 ft s and 584 ft w of ne cor J. Moore sur No. 27	1627	....	....	3505	8-23-28
J. L. Duffy-McGee & Silk's T. Y. Hill 1, 150 ft from sw cor sec 8, blk 70, H&TC Ry sur	....	....	....	2160	3- 5-29
Duffy-McGee & Silk's Lovelace-Lockett 1, 1056 ft n and 640 ft w of se cor sec 66, blk 70, H&TC sur	....	....	....	1824	4-15-29
Duffy-McGee & Silk's J. A. Noyes 1, c se¼ sec 19, blk 70 H&TC Ry sur	....	....	....	1638	2- 1-29
K. Kimberlin et al's Maloy 1, c se¼ of w½ sec 319, Heirs of Ludwig Winkle sur	....	....	....	2090	12- 6-28

CRANE COUNTY

C. C. Duffey et al's Cowden 2, 1412 ft from n and 25 ft from e lines sec 19, blk "X", CCSDRGNG sur	2576	750	2375	2705	9- 6-28
C. C. Duffey et al's Cowden 5, 200 ft from se cor sec 17, blk "X", CCSDRGNG sur	2629	970	2665	2966	6- 2-29
Gulf Prod. Co.'s W. N. Waddell 4, c sw¼ of sw¼ sec 3, blk B-25, P.S.L.	2735	1185	3128 3138	3528	7-29-28
J. K. Hughes-Evans & Anderson's Tucker 1, 2310 ft fr nw and 990 ft fr ne lines sec 23 blk 4, H&TC	2463	525	2480	3651	10- 4-28

CROCKETT COUNTY

G. H. Anderson & P. H. Williams' University 1, 2310 ft fr se cor sec 19, blk 47	2610	990	2000	2618	3- 5-29
J. C. Cunningham & Barbara Oil Co.'s H. B. Cox 1, 3962 ft e and 661 ft n of sw cor sec 1, R. Dickerson sur A-32	2051	....	1082	2008	5- 2-29
V. T. Bolin & Co.'s P. C. Coates 1 (DD), 330 ft fr nw cor sw¼ sec 4, blk 2, I&GN Ry sur	2023	....	....	3050	12-14-28
T. W. Callahan et al's J. S. Todd 1, c sw¼ sec 13, blk "Y-Z", E.L.&R.R. sur	2465	905	1840	2208	11-12-28
Hal Compton & Co. et al's University 1, 1875 ft fr s and 916 ft from w lines sec 15, blk 50	2681	1055	2058	2225	11-27-28
W. W. Donnelly & J. D. Young's R. Massie 1-A, 150 ft fr sw cor sec 28, blk "UV", GC&SF Ry sur	2408	....	....	1103	8-16-28
W. W. Donnelly et al's J. M. Shannon-Middlebuster 2, 2590 ft fr s and e lines sec 18, blk 10, GC&SF sur	2397	774	....	1770	10-12-28
Fuhrman Pet. Corp.'s Padgett 1, 330 ft from c of ne line sec 17, S. C. White sur, A-3003	2305	670	1440	1897	11- 3-28
W. A. Moncrief & W. W. Donnelly's J. S. Todd 1, 660 ft fr ne cor sec 35, blk "WX", GC&SF Ry sur	2613	....	1275	1400	5- 8-29
W. A. Moncrief & W. W. Donnelly's J. S. Todd 2, center se¼ sec 55, blk "UV", GC&SF Ry sur	2449	....	1265	2050	3-27-29
Renee Oil Co.'s University 1, center ne¼ of se¼ sec 8, blk 47	2692	1100	2050 2070	2706	8-14-28
W. R. Simmons & Marland Prod. Co.'s University 1, 150 ft fr s and 1320 ft fr e lines se¼ sec 1, blk 14	2522	875	....	1140	8- 8-28
Texas-Canadian Oil Co.'s University 1, 330 ft fr n and 305 ft fr e lines sec 4, blk 33	2442	....	....	1561	12- 1-28
Tidal Oil Co.'s W. W. Weatherred 1, 5055 ft sw and 330 ft se of n cor sec 30, blk 31, H&TC Ry sur	2329	485	1865	1965	4- 6-29
Transcontinental Oil Co.'s J. D. Atwood 1, 250 ft fr nw cor sec 7, blk "PP", T.C. Ry sur	2555	513	1890	3048	7-13-28
J. D. Wheeler et al's State Fee 1, 168 ft n and 1250 ft e of se cor sec 73, blk 1, I&GN sur, but in strip No. 71½	2326	492	1670	1719	4-25-29
F. P. Zoch et al's J. H. Tippett 1, 330 ft n of c of ne line sec 45, blk 31, H&TC sur, but in sec 1, blk "J-H"	2312	640	1425	1551	1-10-29

CULBERSON COUNTY

Deep Rock Oil Co. & Grisham-Hunter Corp.'s Dettis 1, c nw¼ nw¼ sec 28, blk 59, T&P Ry sur, Tsp 7	3724	....	....	1720	9- 6-28
Deep Rock Oil Co. & Grisham-Hunter Corp.'s Kloh 1, 800 ft s and 1422 ft e of nw cor sec 33, blk 59, T&P sur Tsp 7	3805	....	1020	1600	5-22-29
Deep Rock Oil Co. & Grisham-Hunter Corp.'s J. P. Seay 2, 200 ft n and 250 ft e of center of s line sec 20, blk 59, T&P Ry sur, Tsp 7	3776	....	....	1852	1-26-29

DAWSON COUNTY

Magnolia Pet. Co.'s W. R. Jeter 1, 2630 ft n and 1890 ft e of sw cor sec 1, blk 34, T&P sur, T-4-N	2889	1640	3335 3335	4339	2-14-29

EDWARDS COUNTY

Gail Oil Co.'s Jernigan 1, 1002 ft fr n and 740 ft fr w lines sec 2, GC&SF Ry sur	1773	....	....	4005	12-17-28
Magnolia Pet. Co.'s W. E. Whitehead 2, 1843 ft n and 1110 ft e of sw cor sec 88, blk "D", GC&SF Ry sur	1896	....	....	2190	10-10-28
Mc-Man O. & G. Co.'s Walter Schreiner 1, 330 ft fr se cor sec 50, blk "F", HE&WT Ry sur	....	....	....	3895	1-30-29

FISHER COUNTY

Bickerstaff & Del Norte Dev. Co.'s J. W. McWhirter 1, 2640 ft e and 150 ft n of sw cor sec 295, blk 2, H&TC Ry sur	1932	....	....	2000	2- -29
Cranfill-Reynolds & Sun Oil Co.'s J. R. Fleming 1, 1980 ft s and 2310 ft e of nw cor sec 207, BBB&C Ry sur	1807	....	3135	3218	3-27-29
Cranfill-Reynolds & Sun Oil Co.'s B. F. Willingham 2, 1980 ft s and 2310 ft w of ne cor sec 207, BBB&C Ry sur	1808	....	3071	3482	6- 1-29
Cranfill-Reynolds & Sun Oil Co.'s E. G. Young 1, c nw¼ sw¼ sec 199, BBB&C Ry sur	1801½	....	3050	3155	11-26-28
Dunigan Bros. et al's T. Henry 1, 330 ft s and e of se cor sec 21, but in sec 4, R. H. Hibbett sur No. 331	1913	....	3325	3415	5-28-29
Gilman-McMurray & French's S. D. Cleveland 1, 781 ft n and 1336 ft w of se cor sec 116, blk 2, H&TC sur	1973	....	....	3815	7-10-29
Hucony Gas Co.'s D. F. Mayberry 1, 1078 ft s and 188 ft w of ne cor Elijah Bell sur No. 327	1876	....	2960	3250	2-14-29
Landreth Prod. Corp.'s T. B. Cooper 1, 440 ft fr ne cor nw¼ sec 115, blk 1, H&TC Ry sur	1825	....	2760 3200	3702	5-16-29
R. W. Rainey & Bill Little's J. L. Mayberry 2, 1980 ft fr s and 1320 ft fr w lines sec 56, blk 1, H&TB Ry	1929	....	2995 3225	3507	10-30-28

(Continued on Page 96)

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CONTINENTAL

(Continued on Page 96)

WEST TEXAS DRY HOLE RECORD FOR THE PAST TWELVE MONTHS

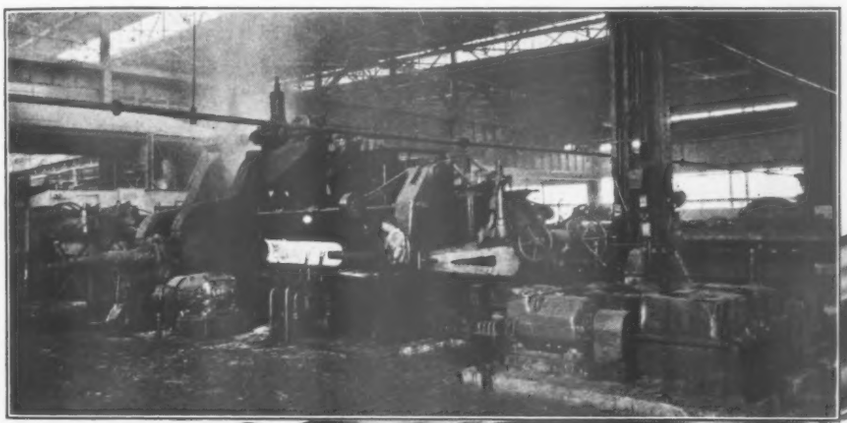
(Continued from page 94)

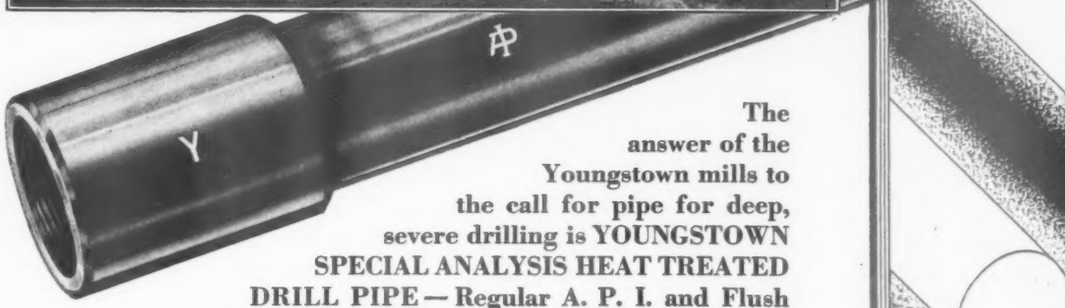
Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
Roeser-Pendleton, Inc.'s R. M. Decker 1, 330 ft fr sw cor n-100-ac of w-160-ac n½ sec 8, blk "R", W. E. Richardson sur	1917	....	....	1325	8-15-28
Roeser-Pendleton, Inc.'s R. M. Decker 1-A, 125 ft n of No. 1	1917	....	....	3314	12- 6-28
Roeser-Pendleton-Amerada's A. T. Haught 1, 440 ft s and 1320 ft e of nw cor sw¼ sec 191, blk 1, BBB&C Ry	1792	....	....	1965	5-20-29
The Texas Co. & Phillips Pet. Co.'s W. H. Hall 1, 330 ft from se cor sec 6, blk 20, T&P Ry sur	2102	....	3160	3600	6-20-29
Texas Unity Oil Co.'s H. E. Reddus 1, 330 ft fr se cor w½ sw¼ sec 211, BBB&C Ry sur	1902	....	3130	3500	10- 1-28
I. E. Thompson et al's A. T. Newman 1, 1320 ft n and 660 ft w of se cor sw¼ sec 44, blk 1, H&TB Ry sur	1882	....	2810 2818	3300	3- 4-29
White Eagle O. & R. Co.'s Neva Hughes 1, 4942 ft s and 560 ft w of ne cor Thomas Cosby sur No. 330	1815	....	2544	2566	6-22-29
GAINES COUNTY					
Pure Oil Co.'s A. A. Williamson 1, 1650 ft s and 330 ft w of ne cor sec 110, blk "H", D&W Ry sur	3197	2333	....	4124	4-30-29
GLASSCOCK COUNTY					
The California Co.'s W. R. Settles 1, 2310 ft fr se cor sec 158, blk 29, W&NW Ry sur	2699	....	2065	3417	4-18-29
Eastland Oil Co. & White Eagle O. & R. Co.'s S. R. Cox 1, c ne¼ sec 29, blk 33, T&P Ry sur, T-4-S	2556	1223	2602	3273	11-20-28
Gibson-Johnson et al's B. C. Mann 1, c nw¼ sec 6, blk 33, T&P Ry sur, T-5-S	2703	1170	2640	3630	4- 6-29
Landreth Prod. Corp.'s A. L. Houston 2, 440 ft fr se cor sec 18, blk 35, T&P Ry sur, T-2-S	2609	1265	3440	3770	8- 8-28
Meriwether Oil Co.'s L. S. McDowell 1, 750 ft fr nw cor sw¼ sec 34, T&P Ry sur, T-2-S	2522	1000	2510	3905	9-19-28
Meriwether Oil Co.'s L. S. McDowell 1, 1492 ft n and 150 ft w of se cor sec 35, blk 34, T&P Ry sur, T-2-S	2517	970	2445	3875	5- 9-29
Penn Oil Co. & Empire G. & F. Co.'s Hughes-Johnson 1, c nw¼ sec 45, blk 30, W&NW Ry sur	2733	....	2310	3510	4-27-29
Roxana Pet. Corp.'s R. L. Boston 1, c se¼ sec 30, blk 34, T&P Ry sur, T-4-S	2713	1205	2769	3875	8-22-28
White Eagle O. & R. Co.'s R. R. Dunbar 1, c nw¼ sec 46, blk 34, T&P Ry sur, T-4-S	2705	1140	2685	3655	3-17-29
World Oil Co.'s L. S. McDowell 1-B, 1650 ft fr w and 330 ft fr s lines sec 32, blk 34, T&P sur, T-2-S	2523	975	2490	3210	11- 2-28
TOM GREEN COUNTY					
Cox & Hooper's Garlity 1, 150 ft s and 450 ft e of nw cor sec 1612, Anna Mertz sur	....	....	....	345	81- 9-28
F. P. Green et al's Fee 1, 575 ft fr n and 1450 ft fr w lines sec 165, Dist. No. 11, SP Ry sur	1994	....	....	1931	2- 4-29
R. O. Haubelt et al's Johnson 2, 1200 ft s and 1319 ft e of nw cor C. Keizer sur No. 164	1821	....	....	1205	8- 8-28
P. H. McLaughlin & W. P. Ridge's Holder 1, 3140 ft n and 80 ft w of se cor J. P. Parker sur	1811	....	....	3003	8- 9-28
Geo. E. Tinker-Collins et al's D. J. Jones 1, 150 ft n and 4250 ft w of se cor J. J. Schaeffer sur No. 646	1882	....	....	1010	4- 3-29
Tulsa Oil Co.'s Adams 1, c sw¼ sec 162, blk 11, SP Ry sur	1943	....	....	1030	12-27-28
Williams et al's A. Willeke 1, 900 varas fr s and 75 ft fr w lines sec 3, Deaf and Dumb Asylum Lands No. 4633	2060	....	....	800	4-12-29
HOWARD COUNTY					
A. & F. Oil Co.'s J. A. Scrivner 1, 2440 ft fr nw cor sec 12, blk 32, T&P Ry sur, T-S-S	2760	....	....	2502	5-30-29
Amerada Pet. Corp. & Rycade's G. C. Stewart 1, 330 ft fr se cor sec 130, blk 29, W&NW Ry sur	2779	....	2240	3209	9-26-28
W. B. Andrews-Marland Prod. Co. et al's J. B. Neal 1, 200 ft fr ne cor sec 17, blk 32, T&P Ry sur, T-1-S	2731	2015	3150	4008	1-31-29
Cosden Oil Co.'s Roberts 1-E, 2310 ft fr se cor sec 157, blk 29, W&NW Ry sur	2718	....	2170	3053	10-23-28
Evans Oil Co.'s Roberts 1, 2440 ft n and 1406 ft w of se cor sec 157, blk 29, W&NW Ry sur	2722	....	2080	3050	4-29-29
Green O&R Co.'s J. W. Furrh 1C, SW¼ Sec. 11, Blk. 31, T&P Ry. Sur., T-1-S	2277	1255	2097	3503½	1-16-29
Group One Oil Corp. (Texon's) M. O. Quinn 1, 330 ft from se cor Sec. 11, Blk. 34, T&P Ry. sur, T-1-S	2499	1070	3103	3749	1- 4-29
L. C. Harrison et al's G. M. Dodge 1, 330 ft from se cor Sec. 9, Blk. 30, T&P Ry. Sur, T-1-S	2321	....	1845	3257	5-10-29
Virgil Hicks & Marland Prod. Co.'s C. D. Read 1, c nw¼ Sec. 12, Blk. 31, T&P Ry. Sur, T-1-N	2375	965	2650	4012	10- 2-28
Louisiana Oil Ref. Corp.'s Kloh et al 1, 2970 ft e and 2310 ft e of nw cor Sec. 3, Blk. 32, T&P sur, T-2-S	2749	....	2174	3217	12- 5-28
Magnolia Pet. Co.'s M. H. O'Daniel 2, 660 ft s and 1980 ft w of ne cor Sec. 39, Blk. 30, T&P Ry. Sur., T-1-S	2208	1260	1800	3600	9-15-28
Magnolia Pet. Co.'s D. Roberts 15, 2310 ft from sw cor Sec. 157, Blk. 29, W&NW Ry. Sur	2721	....	1905	3114	12- 5-28
Mays-Flowers & O'Neil's W. J. Flowers 1, c ne¼ Sec. 42, Blk. 31, T&P Ry. Sur., T-1-N	2497	....	....	2517	4- 4-28
Moody Corp (Superior)'s D. Roberts 3-E, 330 ft from ne cor nw¼, Sec. 136, Blk. 29, W&NW Ry. Sur	2786	....	2140	3096	1-12-29
Phillips Pet. Co.'s J. Thomas 1, 330 ft from se cor Sec. 13, Blk. 33, T&P Ry. Sur, T-1-N	2591	1190	2940	4050	2-17-29
IRION COUNTY					
H. H. Adams & Pat Markley's J. T. Thomson 1, Exact common corners Secs. 11, 12, 6 and 5, Blk. 10, SP Ry. Survey	2159	....	....	1502	9-14-28
Central Oil Co.'s H. Horney 1, 1170 ft n and 450 ft w of sw cor Sec. 3, Blk. 3, H&TC Sur, but in Vacancy Strip No. 1026	2289	....	....	1355	11-27-28
Empire Gas & Fuel Co.'s Sawyer 1, 2310 ft from n and 1650 ft w of se cor Sec. 186, Blk. 1, T&P Ry. Sur	2575	835	1738	2072	8-15-28
Fuhrman Pet. Corp.'s J. D. Sugg 1, Lse. 1, c se¼ Sec. 3024, Blk. 24, H&TC Ry. Sur	2414	750	1585	2004	6-14-29
Fuhrman Pet. Corp.'s J. D. Sugg 1, Lse. 2, c sw¼ Sec. 3029, Blk. 24, H&TC Ry. Sur	2473	920	1808	2450	5- 3-29
Fuhrman Pet. Corp.'s J. D. Sugg 1, Lse. 3, c se¼ Sec. 3009, Blk. 24, H&TC Ry. Sur	2415	811	1631	2275	3-20-29
Irion County Drlg. Co.'s F. Tankersley 2, 1820 ft from w and 2140 ft from s lines Sec. 23, GC&SF Ry. Sur	2293	....	....	1398	5-16-29
C. A. Kimbrough & Tuel's J. M. Nutt 1, 1920 ft s and 200 ft e of nw cor Sec. 5, Gonzales Co. Schl. Lds.	2299	....	....	1400	6-15-29
G. C. McGruder & Mertzon Oil Co.'s Matt Roach 1, 3555 ft w and 1347 ft s of ne cor Sec. 24, GC&SF Ry. Sur.	2404	....	....	2202	11-26-28
Pecos Valley Oil Co.'s Joe Stocks 1, 1250 ft from e and 2500 ft from s lines Sec. 746, Sam Wallstein Sur.	2110	....	....	1296	3-26-29
Richardson & Cochran's Joe Stocks 1, c of Sam Wallstein Survey, Sec. 746	2110	....	....	600	7-20-28
Signal Oil Co.'s J. D. Sugg 1, nw¼ Sec. 9, Blk. "H," H&TC Ry. Sur.	2415	705	....	3155	12-27-28
Signal Oil Co.'s J. D. Sugg 2, 5240 ft from most southerly n line and 996 ft from w line Sec. 23, Blk 27, H&TC Survey	2498	760	1470	3005	4-23-29
Sun Oil Co.'s F. Tankersley 1, 2128 ft from s and 173 ft from w lines Sec. 8, GC&SF Ry. Sur. A-1122	2254	....	....	1452	3-15-29
Sun Oil Co.'s W. H. Williams 1, 1192 ft e and 232 ft n of sw cor Sec. 39, Blk. 21, H&TC Ry. Sur.	2332	....	....	3675	11-28-28
F. E. Webb et al's J. M. Nutt 1, 600 ft n and 300 ft w of c of Gonzales County School Land Sur.	2354	....	....	3511	4- 5-29
Western Oil Co.'s H. Horney 1, 2440 ft from n and 150 ft from w lines Sec. 2, Blk. 3, H&TC Ry. Sur.	2260	....	....	1300	3- 5-29
JONES COUNTY					
E. P. Campbell & Co. et al's J. H. Berry 1, 660 ft from nw cor n½ of e 160 ac of n½, Sec. 15, Blk. 2, SP Ry. Survey	1830	....	....	2602	11- 9-28
E. P. Campbell & Co. & W. G. Clark's E. Dickinson 1, 660 ft n and 330 ft e of sw cor N-320-ac of S-480-ac H. B. Williams Sur. No. 273	1841	....	2507	2542	10-16-28
E. P. Campbell & Co. et al's C. Herndon 2, 330 ft from sw cor nw¼ Sec. 6, MEP&P Ry. Sur.	1807	....	....	2600	3-18-29
W. G. Clark-Mid-Sun & Atlantic's E. Dickenson 1, 330 ft from ne cor w½ of n½ of S-320-ac H. B. Williams Sur. No. 273	1810	....	2478	2501	6- 3-29
W. G. Clark-W. W. Zingery et al's J. T. Thomas 1, 250 ft s and 103 ft w of extreme ne cor Sec. 13, Blk. 19, T&P Sur.	1880	....	2570	2617	12-30-28

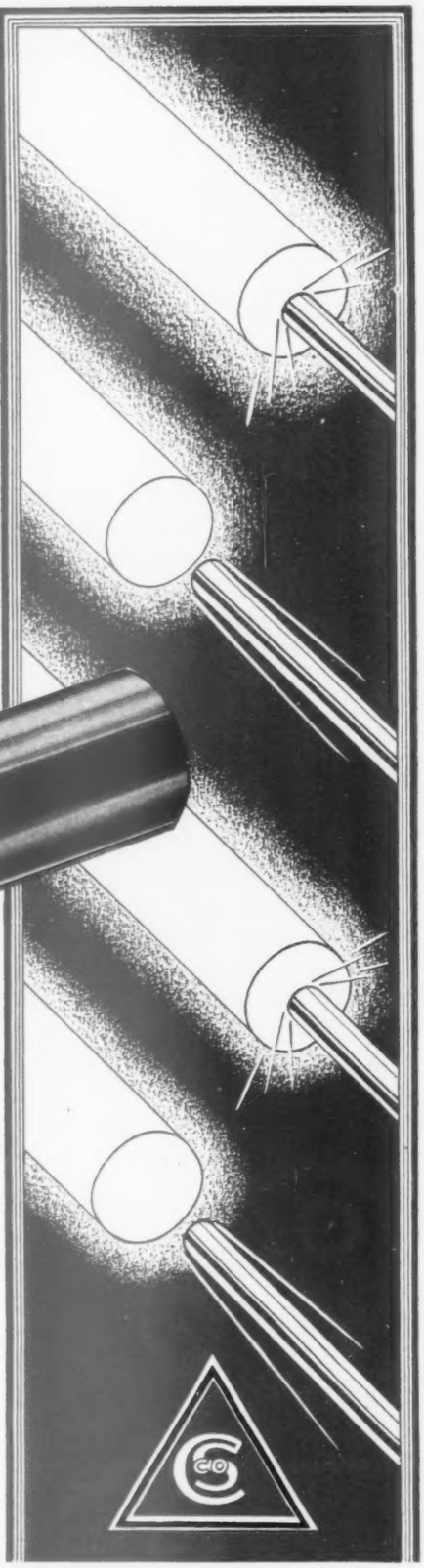
(Continued on page 98)

YOUNGSTOWN
SEAMLESS
PIPE
DEVELOPED FOR DEEP DRILLING!

A view of the Pilger Process Piercing Machine in the Youngstown Seamless Mill







The answer of the Youngstown mills to the call for pipe for deep, severe drilling is YOUNGSTOWN SPECIAL ANALYSIS HEAT TREATED DRILL PIPE—Regular A. P. I. and Flush Joint—and CASING. They are making possible the successful drilling of some of the deepest wells in the world. Still deeper wells will be drilled in the future and, when they are, the Youngstown Sheet and Tube Company will be ready with seamless steel pipe of the proper analysis and construction.

"If Continental Sells It . . . . There Is No Better"

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London Offices: 316-17 DASHWOOD HOUSE, OLD BROAD STREET, E. C. 2

THE CONTINENTAL SUPPLY CO., Ltd.
412 LANCASTER BLDG., CALGARY, ALBERTA, CANADA

CONTINENTAL

WEST TEXAS DRY HOLE RECORD FOR THE PAST TWELVE MONTHS

(Continued from page 96)

Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
Condor Pet. Co.'s W. D. McDonald 1, 340 ft s and 240 ft w of ne cor Lot No. 59, G. A. Kirkland Sur. A-550..	1754	....	2155	3002	6-11-29
Cosden Oil Co. et al's C. C. Brown 1, 200 ft n and 300 ft w of se cor J. H. Grayson Sur. No. 4, Abstract 1772	1867	....	2515	2580	3-20-29
Eastland Oil Co. & White Eagle O&R Co.'s C. T. Derrick 1, 200 ft s and w of nw cor Sec. 53, but in Sec. 57, Blk. 18, T&P Ry. Sur.	1774	....	....	2987	11-13-28
Cowboy Evans et al's S. W. King 1, 1000 ft s and 450 ft w of ne cor w½ of E-80-ac of S-240-ac M. Bueno Sur. No. 197	1651	....	....	2103	11-22-28
P. K. French et al's J. T. Leeson 1, 150 ft from sw cor e½ nw¼ Sec. 31, Blk. 14, T&P Ry. Sur.	1611	....	....	1831	6-12-29
Grisham-Hunter Corp.'s A. C. Hester 1, 330 ft from sw cor e½ Lot No. 12, Louis Kratz Sur, A-247	1861	....	2532	2848	5- 8-29
Grisham-Hunter Corp.'s J. W. Tiner 1, 330 ft from se cor Gabriel Zumwalt Sur. (60-ac Lse)	1886	....	2519	2847	5- 7-29
W. W. Hines et al's J. E. Saunders 1, 150 ft s and 1500 ft e of nw cor Sec. 1, Blk. 15, T&P Ry. Sur.	1604	....	....	2040	10-16-28
Hurley Oil Co.'s W. L. Gunther 1, 1650 ft e and 330 ft n of sw cor Sec. 34, Blk. 18, T&P Ry. Sur.	1884	....	2436	3022	10- 1-28
Independent O&G Co.'s A. T. Smith 1, 990 ft n and 330 ft w of se cor W-59-ac of 200-ac tract, Sec. 51, Blk. 18, T&P Ry. Sur.	1854	....	2528	2554	1-15-29
Independent O&G Co.'s A. T. Smith 2, 330 ft n and 971 ft e of sw cor 59-ac Lse., Sec. 51, Blk. 18, T& PSur.	1855	....	2510	2578	1-14-29
McGinley-Sigler Co.'s M. A. Martin-Scott 1, 1200 ft s and 600 ft w of ne cor Sec. 13, Jos. Wiehl Sur. A-468....	1543	....	....	2018	5- 2-29
McMan O&G Co.'s J. W. Tiner 1, 330 ft from ne cor 50-ac Lse. in Sec. 14, Blk. 19, T&P Ry. Sur.	1888	....	2521	2556	9-11-28
Mid-Sun Oil Corp.'s Geo. Hoehn (Hachan) 1, 1589 ft s & 821 ft w of ne cor W-1001-ac A. Crain Sur. A152....	1889	....	2641 2880	2968	3-29-29
Mook-Texas Oil Co.'s A. M. McCright 1, 220 ft from nw cor E-100-ac of S-200-ac of Stephen Scattorns Sur...	1873	....	2563	2570	10-11-28
Pandem Oil Corp.'s S. R. Cox 1, 150 ft from ne cor Sec. 43, Blk. 14, T&P Ry. Sur.	1642	....	....	1700	9-27-28
Phillips Pet. Co.'s J. C. Mason 4, 993 ft from s and 330 ft from w lines w½ ne¼ Sec. 18, Blk. 19, T&P Ry. Sur.	1896	....	....	3043	11- 4-28
Phillips Pet. Co.'s J. C. Mason 6, 330 ft from ne cor w½ ne¼ Sec. 18, Blk. 19, T&P Ry. Sur.	1899	....	2492	2528	3-12-29
Phillips Pet. Co.'s G. M. Sharp 1, 163 ft from w and 182 ft from n lines of 161½-ac tract Sec. 14, Blk. 19, T&P Survey	1881	....	2496	3018	8-11-28
Phillips Pet. Co.'s H. B. Vestal 3, 991 ft from n and 990 ft from e lines nw¼ Sec. 18, Blk. 19, T&P Ry. Sur.	1919	....	2551	2577	2-23-29
Phillips Pet. Co.'s "W" Joe Winters 1, 330 ft from nw cor 80-ac Lse. Sec. 19, Blk. 19, T&P Ry. Sur.	1881	....	....	3004	3-20-29
Robert Oil Corp. & Cosden Oil Co.'s J. H. Grayson 5, 990 ft n and 330 ft e of sw cor 104.7-ac Lse. Sec. 13, Blk. 19, T&P Ry. Sur.	1880	....	2496	2551	9-27-28
Robert & Cosden's Grayson 8, 2083 ft n and 330 ft w of se cor 104.7-ac Lse. Sec. 13, Blk. 19, T&P Ry. Sur...	1884	....	2503	2516	2-27-29
Robert Oil Corp. et al's A. T. Smith 3, 330 ft from se cor 40-ac Lse. in Sec. 51, Blk. 18, T&P Ry. Sur.	1820	....	2460	2505	11-20-28
Roeser-Pendleton Inc.'s H. O. Castle-Caldwell 1, c of s 77-ac of n½ e½ Sec. 4, Goliad Co. School Land Sur. No. 360, Abst. 180	1865	....	2653 2865	3001	4-10-29
Sedgwick O&G Co. et al's T. J. Routh 1, 1320 ft e and 330 ft n of sw cor 299-ac tract, Austin & Williams Sur. No. 355, Abst. No. 7	1730	....	2700	3267	5- 3-29
Sinclair O&G Co.'s C. A. Bickley 2, 970 ft s and 319 ft e of nw cor n½ ne¼ Sec. 50, Blk. 18, T&P Ry. Sur...	1813	....	2439	3008	2- 1-29
Wood & Williams' M. A. Parr 1, 500 ft from nw cor 134-ac tract, G. A. Kirkland Sur. A-507	1750	....	....	2502	1-16-29
Worth Pet. Co. & Geo. Callahan's Fred Britton 1, 150 ft n and 890 ft e of sw cor 640-ac tract, Austin & Williams Surveys Nos. 354 and 355	1758	....	3060	3224	7- 2-29

KENT COUNTY

J. S. Cosden & Co.'s N. V. Bilby 1, c sw¼ Sec. 56, Blk. 98, H&TC Ry. Sur.	2079	....	860	3555	11- 9-28
Phillips Pet. Co.'s M. S. Sandell 1, 330 ft from sw cor se¼ Sec. 429, Blk. "D", H&TC Ry. Sur.	1861	....	....	4192	11- 1-28

KING COUNTY

Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
Humble O&R Co.'s Pitchfork Ranch 1, 2640 ft from w and 200 ft from s lines Sec. 171, John Gibson Sur.	2029	....	....	4752	11-10-28
The Texas Co.'s J. H. Johnson 1, 4718 ft from n and 815 ft from e lines Sec. 4, Blk. "P", H&GN Ry. Sur.	1533	....	....	4298	12- 5-28

LYNN COUNTY

Elpo Co.'s Nevels 1, 300 ft from n and 150 ft from w lines Sec. 6, Blk. C-42, PSL Sur.	3290	2570	....	3505	7-14-28

MARTIN COUNTY

Phillips Pet. Co.'s C. C. Slaughter 1, 330 ft from se cor Sec. 77, Bauer & Cockrell Survey	2726	1685	3860	4440	9-26-28

MENARD COUNTY

Barnett & Drake's Rasmussen-Callan 1, 990 ft from se cor Sec. 7, Blk. 22, BS&F Ry. Sur.	2245	....	....	2217	5-..-29
Carpenter & Robbins' Kothman 1, 150 ft from nw cor sw¼ Sec. 22, BS&F Ry. Sur.	....	....	....	415	8-..-28
Carl G. Cromwell-J. L. Duffy et al's F. Wilhelm 1, c ne¼ Sec. 6, Blk. "C", Brooks & Burleson Sur. (F. Speck Sur)	2245	....	....	3155	3-27-29
Moody Corp.'s G. S. Allison 1, 330 ft from se cor Johann Kuhler Sur. No. 1473	2053	....	....	3000	8-18-28
Panhandle Ref. Co.'s G. P. Eckhardt 1, c sw¼ Sec. 10, Blk. 2, TWNG Ry. Sur.	2168	....	....	3225	12- 1-28
Renfro et al's J. Davis 1, c nw¼ sw¼ of Jacob Bucher Sur. No. 79	....	....	....	1004	11- 1-28

MIDLAND COUNTY

C. P. Shelton & Atlantic Oil Prod. Co.'s Kloh et al 1, 2190 ft s and 1320 ft e of nw cor Sec. 13, Blk. 40, T&P Ry. Sur., T-4-S	2783	1810	4535	4565	11-13-28
O. H. Shoup et al's Roy Parks 1, c nw¼ Sec. 34, Blk. 41, T&P Ry. Sur., T-2-S	2871	1740	4765	4980	1-10-29

MITCHELL COUNTY

H. H. Adams et al's I. L. Ellwood 1, 2490 ft e and 1170 ft n of sw cor Sec. 20, Blk. 18, SP Ry. Sur.	2226	....	....	659	4-25-29
H. H. Adams et al's I. L. Ellwood 2, 2490 ft e and 1170 ft n of sw cor Sec. 15, Blk. 18, SP Ry. Sur.	2164	....	....	572	6- 3-29
Boehn Drlg. Co.'s H. Hyman 1, c nw¼ se¼ Sec. 90, Blk. 29, W&NW Ry. Sur.	....	....	....	505	9-..-28
E. P. Campbell et al's F. Pond 1, 1064 ft w and 660 ft n of se cor Sec. 79, Blk. 27, T&P Ry. Sur.	2119	870	1385	3003	2- 2-29
Hucony Gas Co.'s C. Weichsel 1, 2310 ft n and 990 ft e of sw cor Sec. 78, Blk. 26, T&P Ry. Sur.	2139	550	1342	4002	12-24-28
McGinley-Sigler Co. & Sun Oil Co.'s H. Hyman 1, 330 ft s and 990 ft e of nw cor Sec. 91, Blk. 29, W&NW Ry. Sur.	2307	....	1993	2006	6-22-29
McGinley-Sigler Co.'s W. T. Scott 1, c ne¼ sw¼ Sec. 36, Blk. 17, SP Ry. Sur.	2267	....	....	730	4- 5-29
Owen-Sloan Co.'s G. M. Brown 1, 330 ft from ne cor Sec. 81, Blk. 26, T&P Ry. Sur.	2138	....	1232	1305	8- 8-28
Owen-Sloan Co.'s G. M. Brown 1-B, 330 ft from sw cor Sec. 93, Blk. 26, T&P Ry. Sur.	2129	430	1332	1375	10- 6-28
Simms Oil Co.'s Ellwood 1-A, 660 ft from nw cor Sec. 33, Blk. 18, SP Ry. Sur.	2258	....	1245	2014	5-21-29
Spence et al's W. C. Brown 1, 2040 ft e and 1320 ft s of nw cor Sec. 37, Blk. 25, T&P Ry. Sur.	2328	730	1265	2000	6-26-29
Wilson Bros. et al's I. L. Ellwood 1, 330 ft from ne cor Sec. 54, Blk. 18, SP Ry. Sur.	2340	....	....	728	5-28-29

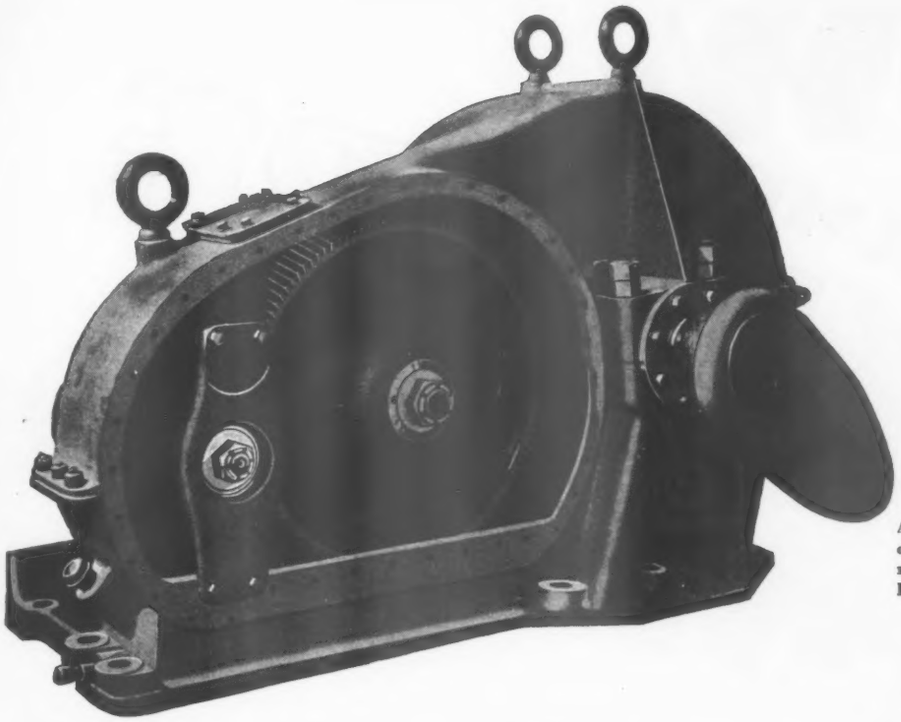
NOLAN COUNTY

Herbert Oil Co.'s Pepper 1, c n½ Sec. 32, Blk. 22, T&P Ry. Survey	2239	....	....	3697	1-24-29
C. M. Root et al's H. D. Simpson 1, 330 ft from ne cor se¼ Sec. 33, Blk. 19, T&P Ry. Sur.	2033	....	2815	3165	3-21-29
White Eagle O&R Co.'s F. E. Allyn 1, 660 ft e and 1720 ft n of sw cor Sec. 48, Blk. 20, T&P Ry. Sur.	2158	....	2920	3040	3- 5-29

PECOS COUNTY

Harry Adams-J. C. McKanna et al's University 1, 1841 ft n and 1077 ft w of sw cor Sec. 92, but in Sec. 12, Blk. 17	2777	930	1777	1990	7- 5-29

(Continued on page 103)



A Westinghouse-Nuttall double reduction oil well unit with side plate removed showing the extreme accessibility for changing the gear ratio.

50 Units in One!

THE exclusive "change gear" feature of Westinghouse-Nuttall double-reduction oil well gear units provides a distinctively simplified arrangement for obtaining the variety of operating speeds required for the various conditions encountered in different wells or for changes in the condition of the same well.

In each of the double-reduction units—OP-11, 13, 14, 15 or 16—more than fifty different reduction ratios can be used, and the prime mover will operate at its most efficient speed with each of them. A gear and pinion for a different ratio—the only additional items required—can be obtained on short notice and the complete change made in less than two hours without even disconnecting the well or prime mover from the unit.

Production equipment that affords this flexibility is indeed an economical investment. Write for full particulars.

Detailed information on Westinghouse-Nuttall units may be obtained from any branch of the Oil Well Supply Company, located in all oil fields, or from any Westinghouse district office.

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Westinghouse

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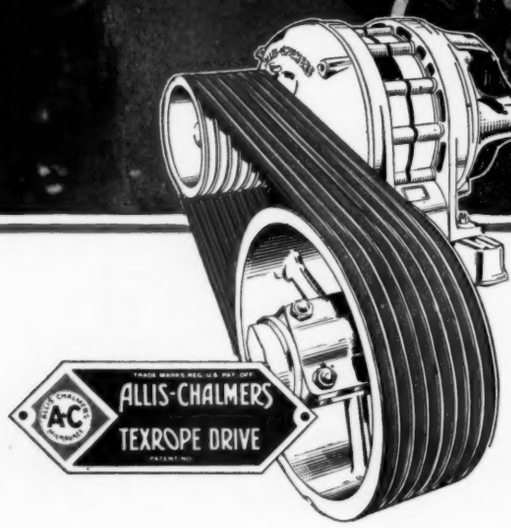

Two sections of our stock rooms, showing some of the larger Texrope belts and sheaves carried in stock.

Texrope Drive is patented. It offers exclusive advantages to the manufacturer interested in smooth, silent, vibrationless power transmission. Texrope Drives are positive, flexible, multiple belt drives for short centers. They require no lubrication, and are not affected by moisture or atmospheric conditions. Built to specifications in sizes from 1 to 2000 H. P.

DRIVES 100 H.P.!

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AGAIN Allis-Chalmers leads in power-transmission service to the modern manufacturer!

We now offer Stock Drives in 83 different ratios for **each** Horse-Power rating within the range indicated above. This unusually wide selection makes it possible to secure a standard speed for any motor, within the ratios of 1:1 to 7:1.

The photographs shown here indicate only a small part of our great warerooms filled with Texrope belts and sheaves. Nowhere else can the manufacturer secure such complete comprehensive power-transmission service for such a wide range of horse-power ratings, **with immediate delivery from stock.** This is just another indication of Allis-Chalmers superior engineering and manufacturing leadership in the power-transmission field!

Today over 60,000 Texrope Drives are transmitting almost one million horse-power for machinery of every type. In every industry TEXROPE is proving its supremacy over belts, gears and chains. An interview with an Allis-Chalmers engineer will quickly reveal all the features of this 98.9% efficient drive. Our service is complete. It is typically Allis-Chalmers in every respect.

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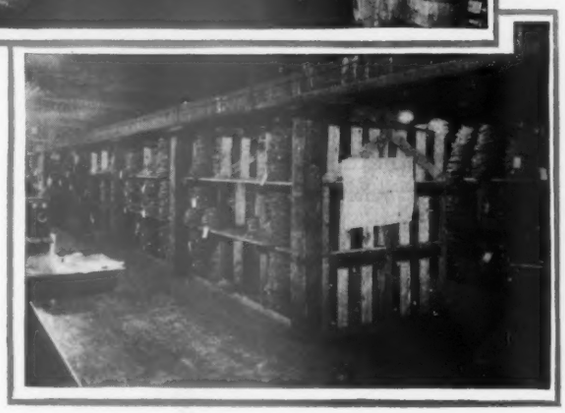

These pictures indicate in a small way the great stock of Texrope belts, sheaves and bushings ready for immediate delivery. These include all sizes from 2 to 100 H. P., with 83 different ratios of sheaves for each horse-power rating.

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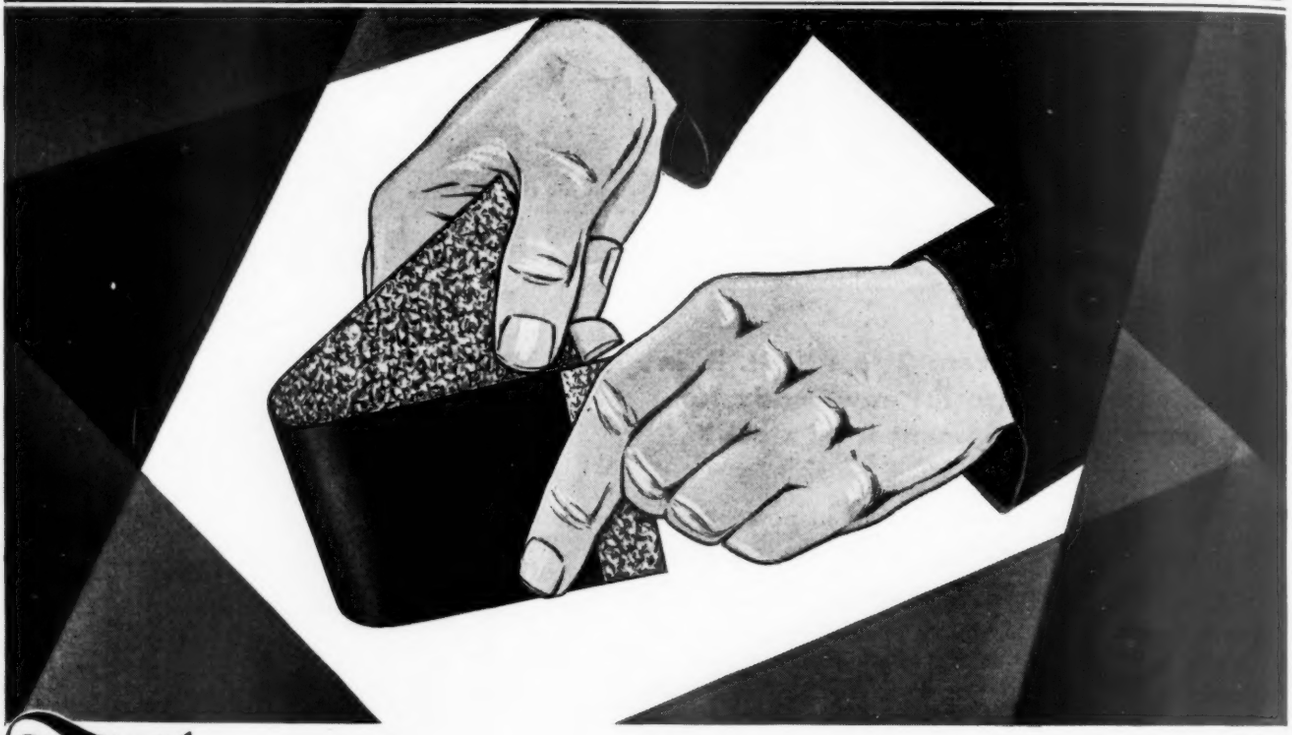

Will not crack, chip or peel off..

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It has unusual tenacity and hiding power. One coat, in most cases, is sufficient for complete protection when applied to wood, brick, stucco, concrete and masonry, as well as metal surfaces. Two coats are recommended for new galvanized iron, but no special priming coats are required for this surface.

For complete information and color card send for L & S booklet, which also contains architects' and engineers' specifications.

INCREASED PROTECTION AGAINST FIRE

The close-grained flat finish produced with L & S Portland Cement Paint is fire-retarding and weatherproof to a degree impossible to obtain with other preservative paints.

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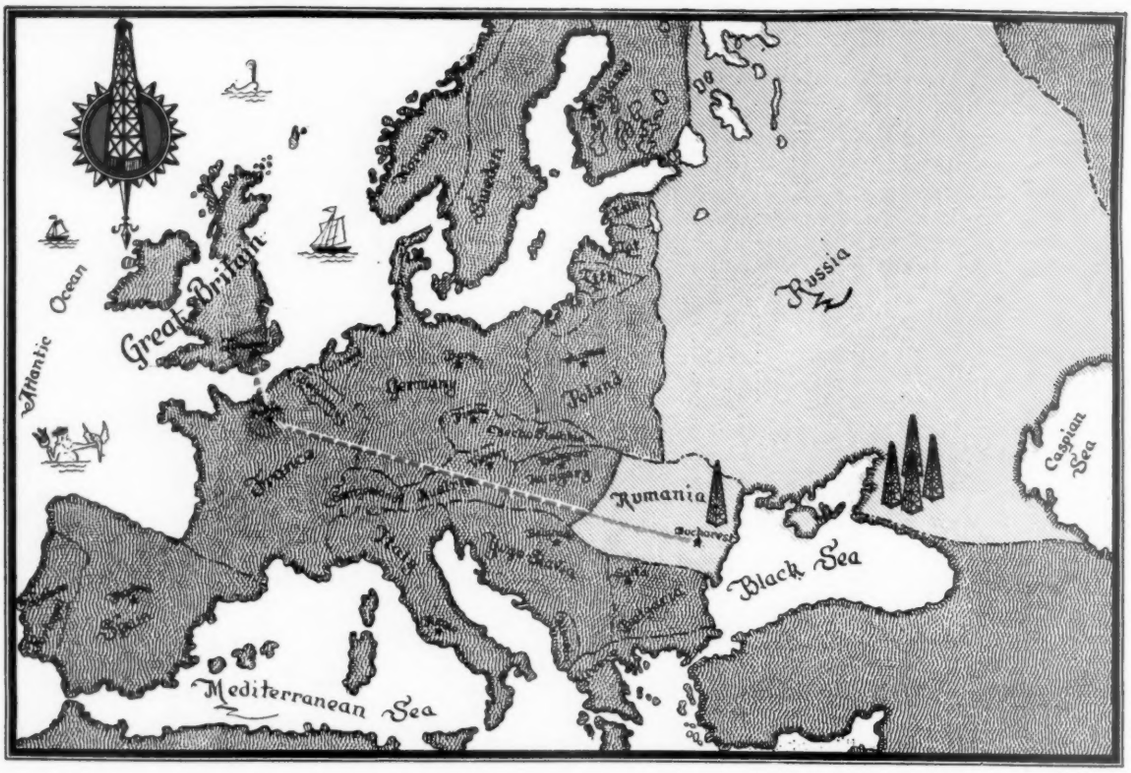
WEST TEXAS DRY HOLE RECORD FOR THE PAST TWELVE MONTHS

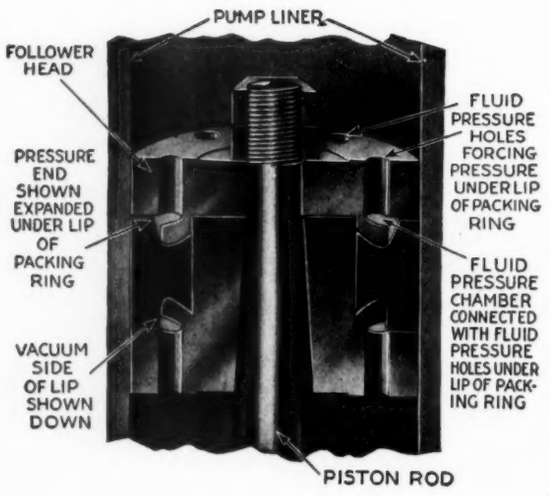
(*Continued from page 98*)

Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
Amerada Pet. Corp.'s R. C. Dillon-State 1 c sw¼ Sec. 28, Blk. 140, T. & St. L. Ry. Sur.	2536	....	1130 1160	1457	7-24-28
Amerada Pet. Corp.'s H. Johnson 1, 330 ft from ne cor Sec. 20, Blk. 140, T. & St. L. Ry. Sur	2558	....	1201 1232	1652	10-12-28
Atlantic Oil Prod. Co.'s Sellman-White 1, 330 ft from sw cor se¼ Sec. 19, Blk. "Z", TC Ry. Sur.	2751	838	1728	1865	2-20-29
Atlantic Oil Prod. Co. et al's J. C. Trees 1, 330 ft from n and 990 ft from w lines Sec. 108, Blk. 8, H&GN Ry. Sur.	2489	....	1672	1928	6-26-29
J. R. Bell et al's A. A. Gray 1, 150 ft from s and 2490 ft from w lines Sec. 593, GC&SF Ry. Sur. A-3009	2532	....	1304	1503	6- 4-29
Benedum-Trees et al's E. Corder 1, 2398 ft w and 1017 ft n of se cor Sec. 44, Blk. 2, CCSDRGNG Ry. Sur.	2713	....	1840	3715	4- 8-29
The California Co.'s M. A. Smith 1, Lse. 2, 1650 ft from sw cor Sec. 26, Blk. 194, GC&SF Sur.	2599	810	1433	1595	3-20-29
The California Co.'s M. A. Smith 1, Lse. 4, 1010 ft from n and e lines Sec. 15, Blk. 194, GC&SF Ry.	2667	880	1604	1786	1-24-29
The California Co.'s M. A. Smith 1, Lse. 5, 1010 ft from n and e lines Sec. 16, Blk. 194, GC&SF Ry.	2679	955	1599	2078	2-19-29
M. Z. Dibble & Compton et al's Irk-Bonebrake 1, 2640 ft from e and 150 ft from n lines Sec. 115, Blk. 8, H&GN Ry. Sur.	2555	1874	....	2004	11-20-28
Bob Elmore et al's M. Holmes 2, 706 ft from e and 659 ft from s lines Sec. 45, Blk. 1, I&GN Ry. Sur.	2190	435	1406	2140	10-12-28
Cowboy Evans et al's S. Byrens 1, 1320 ft from n and 330 ft from w lines Sec. 114, Blk. 11, H&GN Ry. Sur.	2441	....	1310	1451	9-12-28
J. E. Farrell et al's University 1, 800 ft from s and 2400 ft from w lines Sec. 26, Blk. 24	2916	....	1833	2247	7-16-28
A. T. Fletcher et al's Winfield-Power 1, 3140 ft s and 2500 ft w of ne cor Sec. 11, Blk. 132, S. & St. L. Ry. Sur.	3015	1740	1925	1933	10-31-28
Fuhrman Pet. Corp.'s Ewing 1, 1342 ft from w and 1060 it from River bank Sec. 46, Blk. 9, H&GN Ry. Sur.	2325	685	1993	2201	8-21-28
Spot Geyer & E. C. Frates' B. F. Smith 1, c ne¼ Sec. 8, Blk. 145, T. & St. L. Ry. Sur.	2578	745	1365	1607	4-27-29
Grayburg Oil Co.'s University 1, 990 ft from n and 330 ft from e lines e½ ne¼ Sec. 2, Blk. 17	2699	990	1728	1950	4- 4-29
Gulf Prod. Co.'s I. G. Yates 20, 3300 ft n and 10,810 ft e of sw cor Runnels County School Lands	2330	....	1263	1324	11- 1-28
Gulf Prod. Co.'s Yates 21, 1700 ft n and 13,450 ft e of sw cor Runnels County School Lands	2345	....	1262	1375	11- 3-28
Gulf Prod. Co.'s Yates 23, 4950 ft n and 4210 ft e of sw cor Runnels County School Lands	2360	....	1185	1291	11-20-28
Marland Prod. Co.'s Wm. Blakeslee 1, 330 ft n of e of s line Sec. 100, Blk. 8, H&GN Ry. Sur.	2448	1380	2165	2409	4- 7-29
McCarty Oil Co.'s E. W. Bennett 3, 960 ft from nw cor Sec. 592, GC&SF Sur. A-5262	2543	....	1200	1400	1- 3-29
Mid-Kansas-Transcontinental's Yates 25-A, 1698 ft w and 627 ft s of sw cor Sec. 544, but in Vacancy	2322	585	1550	1630	7-26-28
Mid-Kansas-Transcontinental's Yates 27-A, 1296 ft e of easterly ne cor and 250 ft s of easterly ne cor Sec. 31, but in Vacancy	2328	550	1550	1575	4-19-29
Mid-Kansas-Transcontinental's Yates 1-I, 840 ft n and 664 ft e of sw cor 435-ac Lse. Runnels C. S. Lands	2329	....	1275	1325	7-23-28
W. A. Moncrief et al's J. H. Tippett 1, 1980 ft from s and 660 ft from w lines Sec. 46, Blk. 194, GC&SF Ry. Sur.	2462	735	1470	1576	5-31-29
Olean Pet. Co.'s A. Harral 1, c se¼ Sec. 98, Blk. A-2, T. C. Ry. Sur.	3005	845	2540	3303	8-30-28
Phillips Pet. Co.'s Heyman-Nutt 1, 330 ft from se cor Sec. 8, Blk. 125, T. & St. L. Ry. Sur.	2943	1610	2365 3960	4615	9-26-28
Phillips Pet. Co.'s J. L. Nutt 1, 330 ft from se cor sw¼ Sec. 9, Blk. 125, T. & St. L. Ry. Sur.	3113	1720	2480	2717	2-20-29
Rio Pecos Oil Co.'s I. G. Yates 1, 330 ft from nw cor Sec. 543, Blk. 1, H&GN Ry. Sur.	2317	640	1099	1555	12-15-28
Shell Pet. Corp.'s University-Bower 1, 330 ft from e and 990 ft from s lines Sec. 29, Blk 16	2486	765	1480	1770	6-26-29
Southern Crude Oil Pur. Co.'s Scharbauer 1, 330 ft from sw cor Sec. 21, Blk. 134, T. & St. L. Ry. Sur.	3576	....	2020	4232	4- 6-29
Sun Oil Co.'s University 1, 990 ft from n and 330 ft from e lines Sec. 8, Blk. 17	2666	865	1625	2100	7-31-28
Talbot & Dittman's D. K. Unsicker 1, c sw¼ Sec. 25, Blk. 10, H&GN Ry. Sur.	2471	....	1345	1512	3- 2-29
Transcontinental Oil Co.'s Sellman-White 1, 990 ft from se cor Sec. 7, Blk. 194, GC&SF Ry. Sur.	2810	1025	1825	2007	5-25-29
Transcontinental Oil Co.'s University 2 (No. 8802), c sw¼ Sec. 9, Blk. 17	3059	1225	2180	2440	6- 8-29
Trees Oil Co. & Empire's J. C. Trees 1, 330 ft from ne cor se¼ Sec. 63, Blk. 8, H&GN Ry. Sur.	2461	1760	2170	2309	5-23-29
Vacuum Oil Co.'s Elsinore 1, 1200 ft from e and 330 ft from n lines Sec. 60, Blk. "D", GC&SF Ry. Sur.	3554	....	....	4480	9-10-28
Weekly Oil Corp. et al's L. L. Byrne 1, 990 ft from nw and sw lines Sec. 24, Blk. 10, H&GN Ry. Sur.	2479	1260	....	1600	5- 8-29
P. R. Whonlich & Co.'s R. W. Arnold 1, 500 ft from nw cor Sec. 25, Blk. 1, GC&SF Ry. Sur.	4189	....	....	1550	10-16-28
Yates Ranch Oil Co.'s I. G. Yates 1, c Lot No. 51, Sec. 70, Blk. 1, I&GN Ry. Sur.	2201	530	....	1648	1- 4-29
F. P. Zoch & W. A. Moncrief's Union Land Co. 1, c Sec. 35, Blk. 12, H&GN Ry. Sur.	2244	540	1225 1255	1368	11- 2-28
PRESIDIO COUNTY					
Brite Prod. Co.'s L. C. Brite 1, c Sec. 50, Blk. 12, GC&SF Ry. Sur.	4685	....	....	5156	2-26-29
Brite Prod. Co.'s L. C. Brite 2, 2500 ft n and 2200 ft w of se cor Sec. 51, Blk. 12, GH&SA Ry. Sur.	....	....	....	700	4- 3-29
Brite Prod. Co.'s L. C. Brite 3, 2500 ft n and 2300 ft w of se cor Sec. 51, Blk. 12, GH&SA Ry. Sur.	....	....	....	1000	5-13-29
REAGAN COUNTY					
The California Co.'s University 5, 2310 ft from ne cor Sec. 16, Blk. 7	2879	1280	2943	3272	4- 8-29
Empire Gas & Fuel Co.'s Sawyer 1-A, 4160 ft from s and 330 ft from w lines Sec. 18, Blk. "A", L. G. Gee Sur.	2474	910	3010	3050	12- 4-28
Moody Corp.-Cromwell & Herbert Oil Co.'s R. A. Walters 1, 1908 ft from se cor Sec. 4, HE&WT Ry. Sur.	2765	1120	2265	3006	7-19-28
R. V. Oberholtzer & Carl Cromwell's J. A. Talley 1, 1650 ft from sw cor Sec. 6, GC&SF Ry. Sur.	2592	1005	2765	3012	4-25-29
Skelly Oil Co. & Utah Southern's University 4, 990 ft from e and 2310 ft from s lines Sec. 33, Blk. 8	2852	1270	3028	3096	6- 8-29
Texon Oil & Land Co.'s University-McBurnett 1, 330 ft from nw cor Sec. 11, Blk. 7	2867	1270	2990	3103	7-17-28
REEVES COUNTY					
Eastland Oil Co.-Geo. Lyles & Vacuum Oil Co.'s Campbell 1, 330 ft from n and 1650 ft e of sw cor Sec. 43, Blk. 59, PSL Sur.	3176	....	3040	3555	9-18-28
Dr. D. A. Kitsos et al's Kloh 1, 330 ft from se cor Sec. 5, Blk. 54, T&P Ry. Sur, Tsp. 5	2786	....	....	1250	2- 2-29
McRobie et al's Bell 1, 1020 ft from s and 1500 ft from w lines Sec. 20, Blk. 2, H&GN Ry. Sur.	2673	....	....	654	9-20-28
Penn Oil Co.-Amerada-Atlantic-Magnolia's E. G. Bowles 1, 330 ft from ne cor Sec. 36, Blk. 50, T&P Ry. Sur. Tsp. 8	2783	1725	5177	5612	6-27-29
Southern Crude Oil Pur. Co.'s Kloh 1, 330 ft from nw cor se¼ Sec. 23, Blk. 51, T&P Ry. Sur., Tsp. 8	2784	....	....	1535	6-28-29
RUNNELS COUNTY					
B. L. Agnew-Shields et al's R. R. Russell 1, 500 ft n and 864 ft w of ne cor A. J. Loverly Sur. No. 349, but in Mrs. H. Hollier Sur.	1727	....	3975	4025	11-22-28
Gibson-Johnson et al's W. H. Rainwater 1, 660 ft n and e of most southerly sw cor J. H. San Miguel Sur.	1837	....	....	2940	11- 8-28
Jones Oil Synd.'s W. Hale-Runnels 1, 212 ft from n and 150 ft from e lines Sub-Div. No. 29, Sec. 109, E. T. Ry. Sur.	1918	....	....	2250	12-..-28
J. L. Kennedy & Kenwood Oil Co.'s J. E. Talley 1, 2310 ft s and 1445 ft w of ne cor J. G. McKeon Sur. 534	1777	....	....	3015	8- 7-28
Marland Prod. Co.'s A. Herring 1, 330 ft s and 1650 ft w of ne cor Sec. 139, E. T. Ry. Sur.	1821	....	4075	4200	6-10-29
Henry B. May et al's J. M. Schneider 1, 660 ft from e line John Wall Sur. No. 378 and 1980 ft s of nw cor Jas. Strode Sur.	1666	....	....	2509	8- 8-28
Miles Oil Co.'s L. S. Lawhon 1, 330 ft from ne cor Sec. 68, T&NO Ry. Sur.	1849	....	....	2442	10-25-28
Ira Nourse & E. Tilton's R. A. Cramer 1, 200 ft from n and 600 ft from w lines Sec. 2, GC&SF Ry. Sur.	1775	....	....	3971	7- 6-29

(Continued on page 106)

..."BUT THERE IS NEIT
NOR BORDER NO




PUMP LINER
FOLLOWER HEAD
PRESSURE END SHOWN EXPANDED UNDER LIP OF PACKING RING
VACUUM SIDE OF LIP SHOWN DOWN
FLUID PRESSURE HOLES FORCING PRESSURE UNDER LIP OF PACKING RING
FLUID PRESSURE CHAMBER CONNECTED WITH FLUID PRESSURE HOLES UNDER LIP OF PACKING RING
PISTON ROD

KIBELE PISTONS

The *KIBELE Self Expanding and Frictionless Piston* is made for:—rotary drilling slush pumps . . . mine pumps . . . boiler feed and oil pumps. It is made to fit any pump and no special piston rod is required. The working parts of the piston are shown in the illustration at the left . . . piston head; follower head; packing ring; vacuum side of lip down; fluid pressure holes forcing pressure under lip of packing ring. The rubber is compounded to our own specifications. Pistons are of exceptionally close gray iron with outer surfaces chilled.

HER EAST NOR WEST
R BREED NOR BIRTH...”

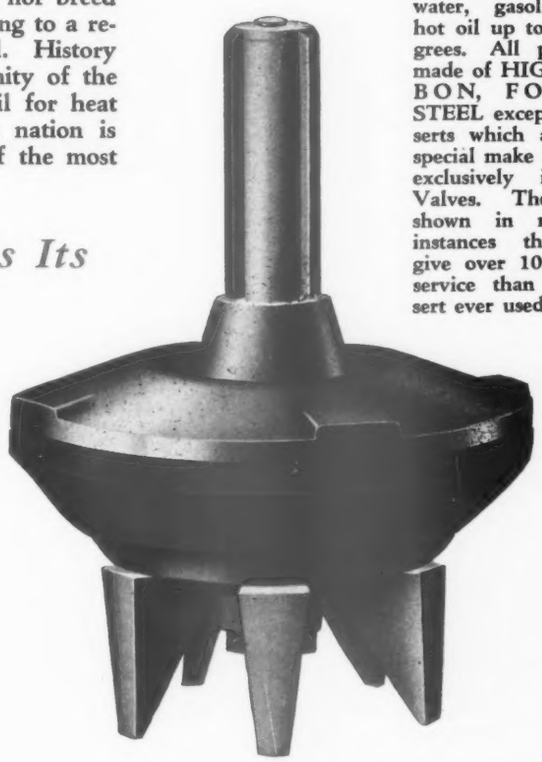
THE map at the left shows the itinerary of a representative of the MISSION Sales Company. He is on his way now to London, thence by airplane to Paris, thence to Bucarest from which base he will trek over the oil fields of Rumania and Russia. Concerning oil, the world commodity with a world market, “there is neither East nor West, nor border nor breed nor birth.” Going to the near East is not going to a region new in the production or use of oil. History records that the ancient people in the vicinity of the Caspian, in Persia and Asia Minor used oil for heat and light. Now the world’s most modern nation is sending its oil field supplies to the land of the most ancient users of oil.

A Pump is As Good As Its Valves an Pistons

A pump is “valves and pistons in a suitable surrounding structure.” Therefore a pump is only as good as its valves and pistons. When you have the SECO Valves that give 100% more service and the KIBELE Self Expanding and Frictionless Piston, recognized as superior in oil fields the world over . . . you have the best all-purpose oil field pump made. More and more oil men in every part of the globe are learning that the word “MISSION” symbolizes leadership in specialized oil field tools and equipment. SEND FOR DESCRIPTIVE FOLDER—NOW.

SECO VALVES

The SECO STRAIGHT - SHOT VALVE illustrated to the left below is made for all makes and sizes of pumps. It is particularly adapted to slush, hot and cold water, gasoline and hot oil up to 300 degrees. All parts are made of HIGH CARBON, FORGED STEEL except the inserts which are of a special make and used exclusively in Seco Valves. They have shown in numerous instances that they give over 100% more service than any insert ever used.

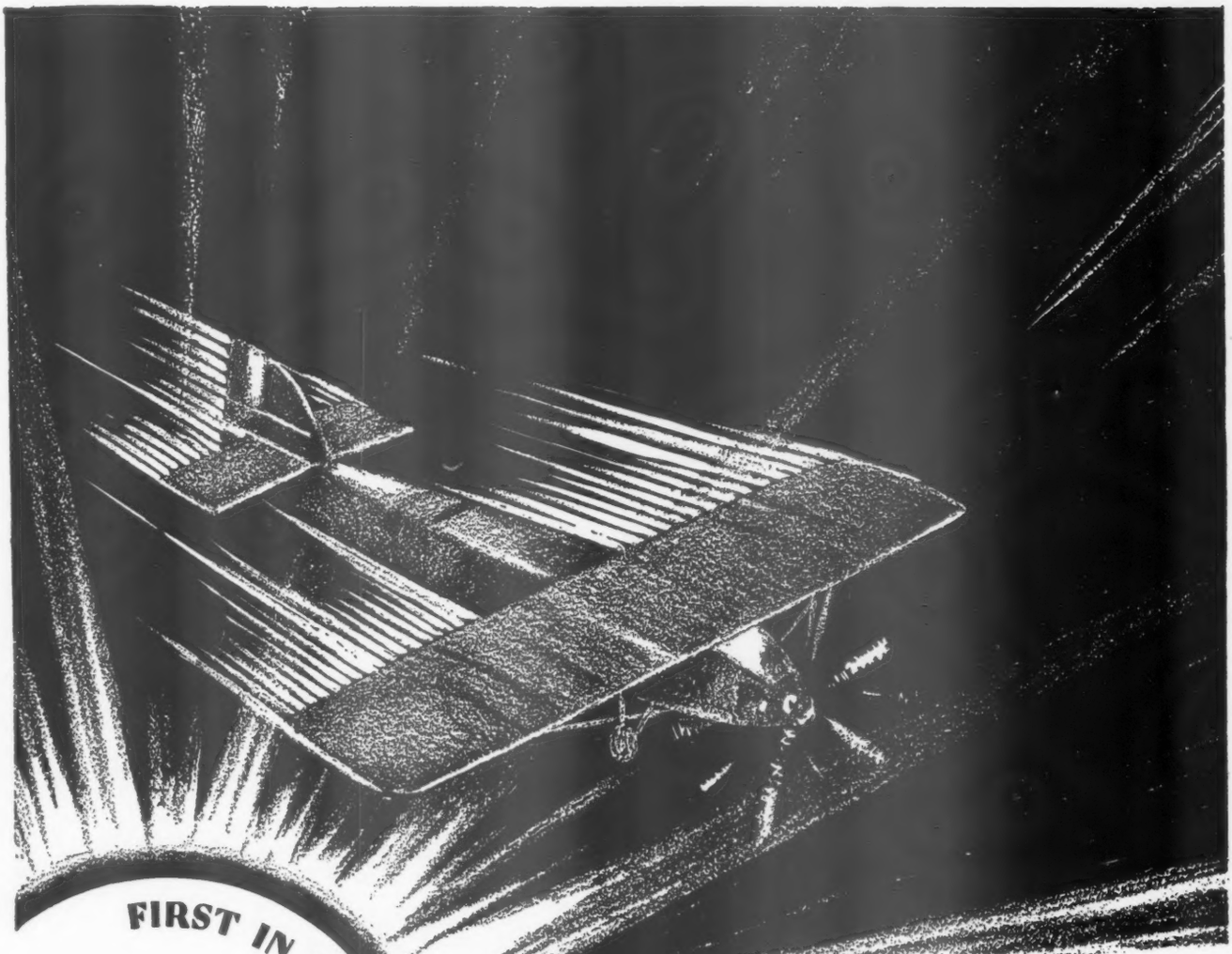


MISSION
Sales Company, Inc.,
Esperson Bldg.
HOUSTON

WEST TEXAS DRY HOLE RECORD FOR THE PAST TWELVE MONTHS

(*Continued from page* 103)

Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
Pure Oil Co.'s H. Giesecke 1, 9250 ft s and 1490 ft w of ne cor Jacob Smith Sur. No. 228	1698	....	....	3150	10-12-28
Pure Oil Co.'s R. R. Russell 1, (core test), 367 ft e and 12,231 ft s of nw cor Jas. Hughes Sur. No. 227	1643	....	....	1421	3-..-29
Pure Oil Co.'s R. R. Russell 2, (core test), 945 ft e and 12,015 ft s of nw cor Jas. Hughes Sur. No. 227	1624	....	....	1445	3-..-29
R. B. Summers et al's J. W. Reese 1, 660 ft s and 720 ft w of se cor M. P. Parramore Sur. No. 26, but in DL&C Sur.	1794	....	....	1655	1-..-28
Union Oil Co. of Nevada's W. E. Allen 1, 1000 ft from se and sw lines Sec. 1, HE&WT Ry. Sur.	1682	....	....	3874	4-17-29
Vacuum Oil Co.'s D. L. Brevard 1, 2150 ft n and 302 ft e of sw cor 197-ac Lse., Lot No. 19, D. Diaz Sur. No. 532	1730	....	....	2594	1-19-29
Vacuum Oil Co.'s J. S. Flannigan 1, 750 ft from nw cor Lot No. 29, D. Diaz Sur.	1767	....	....	2700	8- 8-28
Vacuum Oil Co. & Owenwood Oil Corp.'s H. B. Fowler 1, 1563 ft n and 250 ft w of se cor Lot No. 23, D. Diaz Sur.	1706	....	....	2583	8- 2-28
SCURRY COUNTY					
Landreth Prod. Corp.'s Wm. Hillmer 1, 330 ft from ne cor Sec. 75, Blk. 25, H&TC Ry. Sur.	2314	870	1735	4290	12-20-28
STERLING COUNTY					
H. H. Gracey & W. L. Foster's W. L. Foster 1, c se¼ Sec. 20, Blk. 12, SP Ry. Sur.	2260	....	1296	2503	5- 8-29
Manhattan Oil Co.-Hucony Gas Co.'s Ellwood 1, 250 ft n of c of s line Sec. 14, Blk. 2, H&TC Ry. Sur.	2533	1235	1990	3610	8-21-28
Geo. L. Miller et al's W. L. Foster 1, 3691 ft s and 1397 ft w of ne cor Sec. 4, Blk. 31, T&P Ry. Sur., T-4-S	2662	1140	2094	3028	6- 1-29
G. B. Orr & F. P. Zoch et al's Neal Reed 1, center of n line Sec. 15, Blk. 30, W&NW Ry. Sur.	2547	....	2035	3015	9-28-28
STONEWALL COUNTY					
Henshaw Oil Corp.'s W. P. Moore 1, 1320 ft s and 330 ft w of nw cor Wm. Vardeman Sur. No. 347, but in Sec. 136, Blk. 1, H&TC Ry. Sur.	1727	....	1550	3350	8-15-28
Sun Oil Co. & Cranfill Bros. Oil Co.'s Alice Rayner 1, 330 ft from sw cor Sec. 20, Blk. "D", H&TC Ry. Sur.	1818	....	1500	3618	1-15-29
SUTTON COUNTY					
Phillips Pet. Co.'s Cawthorn 1, 330 ft from nw cor Sec. 17, CCSDRGNG Ry. Sur.	2238	....	....	970	1- 9-29
Phillips Pet. Co.'s B. H. Cusenbary 1, 2310 ft e and 330 ft s of nw cor Sec. 39, CCSDRGNG Ry. Sur.	2239	....	....	1040	11-25-28
Southern Crude Oil Pur. Co.'s Allison 1, 2310 ft from n and 330 ft from e lines Sec. 44, Blk. "K", GH&SA Ry. Sur.	2373	....	....	4950	6- 5-29
TAYLOR COUNTY					
J. N. Burnham et al's C. B. Amyx 1, 300 ft from ne cor Sec. 26, Blk. 6, S PRy. Sur.	1965	....	....	2327	2-13-29
Grisham-Hunter Corp.'s H. E. Campbell 1, 330 ft from nw cor nw¼ sw¼ Sec. 65, Blk. 19, T&P Ry. Sur.	2085	....	2625	2780	3-18-29
Grisham-Hunter Corp.'s T. L. Stevens 1, 220 ft from nw cor Sec. 53, Blk. 19, T&P Ry. Sur.	1964	....	....	2753	11-19-28
Hurley Oil Co.'s Mrs. A. R. Payne 1, 330 ft from sw cor e½ nw¼ Sec. 52, Blk. 19, T&P Ry. Sur.	1911	....	2473	3038	1- 6-29
Mid-Continent Pet. Corp.'s J. H. Taylor 1, 900 ft w and 215 ft n of se cor 100-ac tract, Lot No. 3, Sec. 18, Guadalupe County School Lands	1933	....	2384	3007	5-21-29
Mid-Kansas O&G Co.'s J. H. Parramore 1, 330 ft from ne cor Sec. 81, Ephram Anderson Sur.	1653	....	....	2620	1- 8-29
L. H. Wentz et al's R. L. Armour 1, 375 ft n and 330 ft w of se cor w½ Sec. 165, Blk. 6, SP Ry. Sur.	2111	....	....	2300	3-27-29
TERRELL COUNTY					
Champlin Ref. Co.'s Carter-Corder 1, c nw¼ Sec. 5, Blk. 2, CCSDRGNG Ry. Sur.	2884	....	....	3553	11-21-28
TERRY COUNTY					
Superior Oil Prod. Co. (was Kingsland)'s Brownfield 1, (dd), 980 ft from s and 204 ft from w lines Sec. 7, Blk. A-1, EL&RR Sur.	3205	2415	4565	5080	2- 9-29
UPTON COUNTY					
Company and Dry Hole Location—	Surface Elevation	Top Salt	Top Lime	Total Depth	Date Completed
J. G. Buell & A. M. Hagen's J. W. Robbins 1, 330 ft fr and 1650 ft fr e lines sec 2, Rusk Trans. Co. sur.	2570	570	2070	2100	8-20-28
Cordova Union Oil Corp.'s Union 1, 330 ft fr sw cor sec 4, GC&SF Ry sur, A-796	2633	570	2033	2210	9-10-28
Humble O. & R. Co.'s R. P. Ricker 9, 5574 ft fr nw and 2271 ft fr sw lines sec 5, M. S. Denton sur, A-127	2652	640	2125	2955	10-24-28
Marland Prod. Co. & L. H. Wentz's Timms 1, c sec 71, blk "Y", TC Ry sur	2836	1460	3330	3543	7-31-28
Sun Oil Co.'s R. F. Long 1, 330 ft fr w and 660 ft fr n lines 640-ac Lse sec 3, Rusk Trans. sur, A-356	2631	580	2029	2216	5- 1-29
F. P. Zoch et al's Murphy-Union Land Co. 1, 1320 ft fr w and 660 ft fr s lines sec 1, blk "AB", J. W. Murphy sur, A-303	2538	565	2056	2199	8-23-28
WARD COUNTY					
Denver Prod. & Ref. Co.'s Cherokee fee 1, 990 ft fr ne and 2310 ft fr se lines sec 215, blk 34, H&TC Ry sur	2597	2755	4664	4703	11-13-28
Rector Oil Co.'s M. L. Johnson 1, 5610 ft fr ne lines and 1155 ft fr nw lines sec 10, blk 32, H&TC Ry sur.	2438	745	2010	2677	2-19-29
Talbot et al's C. C. Dorr 1, 1320 ft fr se and 660 ft fr sw lines sec 9, blk 5, H&TC Ry sur	2430	745	....	2623	2- 2-29
WINKLER COUNTY					
Amerada Pet. Corp.'s L. Daugherty 3, 2310 ft n and 990 ft w of se cor sec 3, blk 74, P.S.L. sur	2902	1345	2854	3242	3-10-29
Anderson et al's Ida Hendrick 1, 2310 ft n and 990 ft w of se cor sec 5, blk B-12, P.S.L. sur	2757	1600	2740	3190	1- 2-29
Atlantic Oil Prod. Co.'s Hendrick 2-C, 990 ft n and 330 ft e of sw cor sec 40, blk B-5, P.S.L. sur	2824	....	2212	3220	10-24-28
Barnsdall Oil Co.'s Tobe Morton 1, 330 ft fr sw cor sec 26, blk B-12, P.S.L. sur	2730	1890	2884	3262	2- 5-29
Barnsdall Oil Co.'s Tobe Morton 2, 1650 ft n and 330 ft e of sw cor sec 26, blk B-12, P.S.L. sur	2720	1805	2751	3124	4-10-29
Cranfill-Reynolds, Inc.'s T. G. Hendrick 1-F, 2310 ft e and 660 ft s of nw cor sec 16, blk 26, P.S.L. sur	2874	1985	....	2900	11-15-28
Empire Gas & Fuel Co.'s L. Daugherty 1-B, 330 ft fr sw cor e½ ne¼ sec 3, blk 74, P.S.L. sur	2909	1385	2821	3780	5-14-29
Gulf Prod. Co.'s E. W. Cowden 2, 495 ft n and 330 ft e of sw cor se¼ sec 3, blk B-12, P.S.L.	2778	1320	2926	3498	2-10-29
Gulf Prod. Co.'s G. W. O'Brien 2, 330 ft fr nw cor sec 31, blk "F", G&MMB&A sur	2719	2063	2723	3093	1-23-29
Gulf Prod. Co.'s G. W. O'Brien 3, 2310 ft s and 330 ft e of nw cor sec 31, blk "F", G&MMB&A sur	2721	2420	2700	3105	1-28-29
Humble O. & R. Co.'s T. G. Hendrick 5-C, Lse 2, 2200 ft from s and 2310 ft fr w lines sec 10, blk B-12, P.S.L. sur	2753	1380	2620	3067	3-19-29
Independent O. & G. Co.'s Morton-Russell 1, 2310 ft fr n and 1650 ft fr e lines sec 27, blk B-12, P.S.L. sur.	2742	....	2802	3165	3-13-29
Marland Prod. Co.'s Ida Hendrick 1-C, 330 ft fr se cor w½ ne¼ sec 30, blk B-5, P.S.L. sur	2804	....	2778	3155	11-29-28
Prairie O. & G. Co.'s Tobe Morton 1, 330 ft fr se cor sw¼ se¼ sec 27, blk B-12, P.S.L. sur	2731	1540	2815	3112	1-20-29
Shell Pet. Corp.'s J. B. Leck et al 1, 990 ft s and 1650 ft e of nw cor sec 3, blk 74, P.S.L. sur	2895	1612	3030 2789	3194	6- 6-29
Shell & Llano Oil Co.'s W. F. Scarborough 3, 990 ft fr sw cor sec 2, blk C-23, P.S.L. sur	2939	1280	3358 2958	3486	9-12-28
Shell & Llano Oil Co.'s W. F. Scarborough 5, 330 ft fr s, and 990 ft fr w lines sec 3, blk C-22, P.S.L. sur	2966	1112	3241 2733	3565	4-16-29
Skelly Oil Co.'s T. G. Hendrick 2-C, 1320 ft n and 2310 ft w of se cor sec 10, blk B-12, P.S.L. sur	2752	....	2636	3155	7- 2-29
Texas-Canadian Oil Co. & Superior's Kloh 1, c sw¼ sec 35, blk 46, T&P Ry sur, T-1-N	3243	1490	....	4008	5- 5-29
Texas Pacific Coal & Oil Co.'s L. Daugherty 1, 330 ft fr se cor sec 4, blk 74, P.S.L. sur	2881	1460	2892	3243	10- 6-28



THESE specifications show the laboratory analysis of Humble *Flashlike* Gasoline and its explanation in everyday terms.

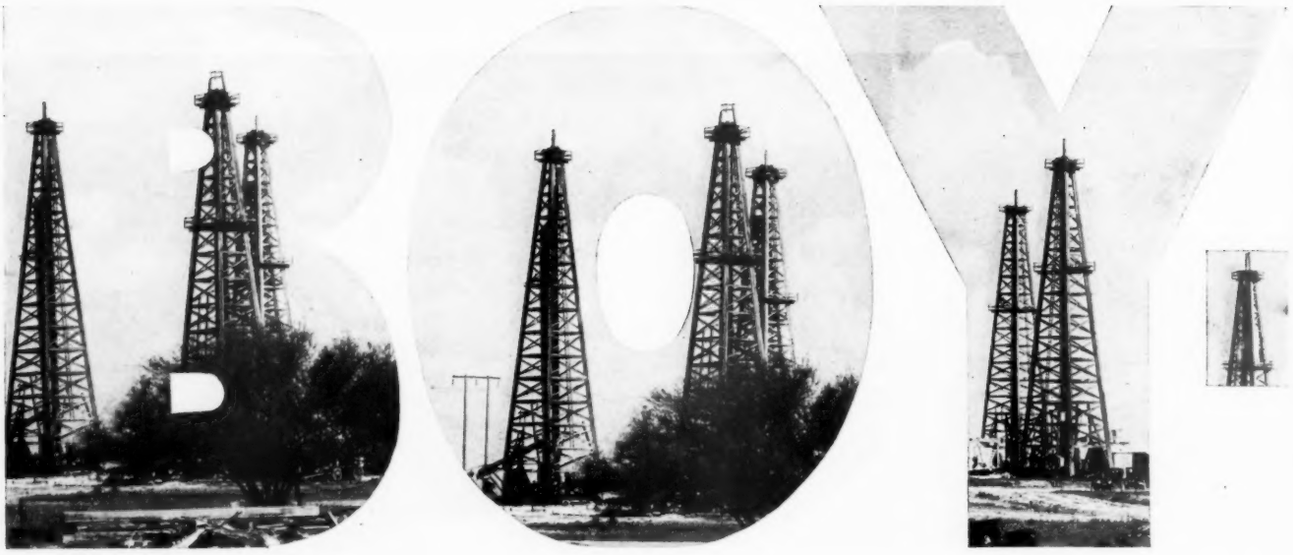
You may not be interested in a technical description of how gasoline is made, but everyone who drives a car is interested in how the product acts in the motor.

It will pay you to study these specifications and make them the basis on which you buy your gasoline.

HUMBLE FLASHLIKE GASOLINE

LABORATORY ANALYSIS			WHAT IT MEANS TO YOUR MOTOR
Initial Boiling Point	110 Maximum	:	Easy starting—First in the get-away—No sputtering
% distilled at 221° Fahr. % distilled at 284° Fahr. % recovery	25 Minimum 52 Minimum 97%	:	More power, long burning stroke, less gear shifting
End Point	400	:	Complete vaporization—complete combustion
Doctor Test	OK	:	Clean odor—never offensive
Corrosion Test	OK	:	No choking or corrosion of gas line
Color	Plus 25	:	Highly refined, clean, and clear
Sulphur	less than 1/10 of 1% Max.	:	No pitting of valves, or fouling of oil
Gum Test	OK	:	No resinous precipitate to clog carburetor

SPECIFICATIONS



The "Greyhound" Five Sheave Traveling Block

On this famous "Traveling Block" you will find these outstanding features which guarantee you longer and better service:

Overbalanced—A high sheave center prevents rolling over.

Oversize Bearing—Is made of special forged steel, pack-hardened and ground to size. This will carry 50% to 100% more weight.

Bearings—American Heavy Duty type, which reduces friction to a minimum.

Safety Features—Top bails are guarded by protectors, which guard it from becoming entangled while in action.

Sheaves—Extra large diameter for greater speed; Semi-steel or manganese steel optional.

Lubrication—Individual alemite connection to each sheave, easily accessible from side of block.

The Boykin 5-sheave traveling block has long been known for its speed, ease on lines and long life.

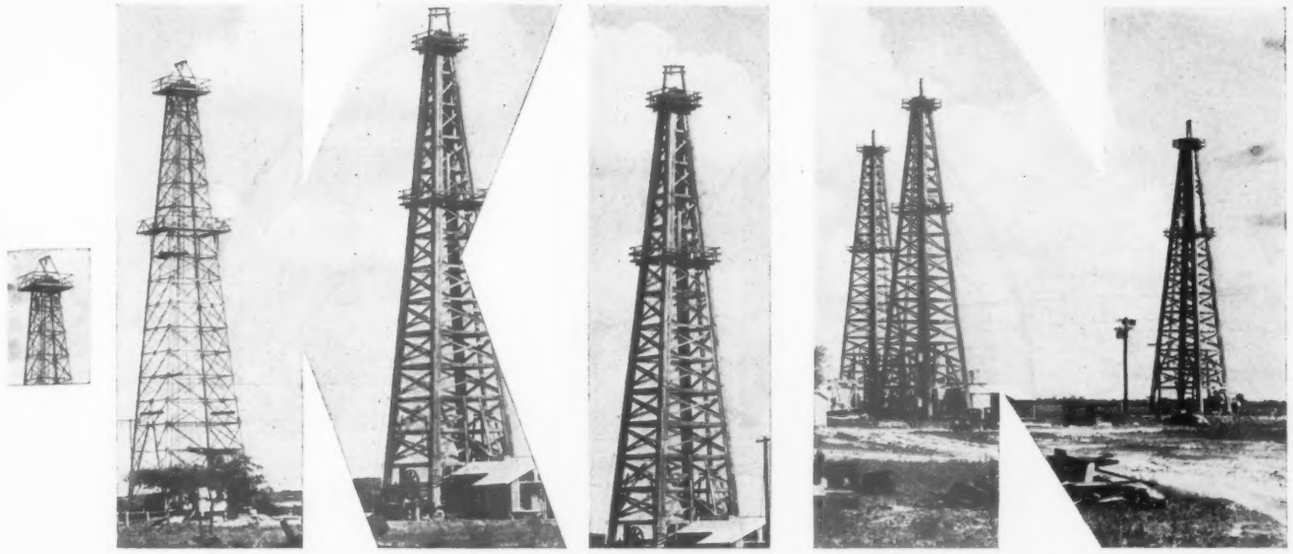
PRODUCTS are Known and Used Wherever the Sound of *DRILLING* is Heard!

That Boykin, "Greyhound," drilling and pumping equipment, should have attained such renown, is an achievement, inherent from the high standard of manufacture and unexcelled performance of this equipment.

Boykin Machinery & Supply Company is an organization of craftsmen, skilled in the manufacture of oil field equipment of the first rank. From rough steel castings to the completely finished product, the wisdom of many minds, and the dexterity of skilled hands, dovetail in perfect unison to give you an article of superior construction and lasting performance.

This spirit of cooperation governs the manufacture of Boykin "Greyhound" products. It is responsible for their leadership and world-wide acceptance as such; it is evidence of their superiority of construction, and reason for their acclaim.

"Greyhound" performance in the field is a result of all this finesse of manufacture. And Boykin's "Greyhound" products have demonstrated their ability under practically every known condition in fields the world over. From North to South, East to West, "Greyhound" drilling and pumping equipment is rendering its owners a finer and better service—is giving them a newer and greater appreciation for economical performance.



This line of equipment, manufactured by Boykin, represents the ultimate in the skillful construction of oil field products:

Draw Works
Draw Works Braces
Tubing Hoist
Rotaries
Countershafts
Tubing Blocks
Traveling Blocks
River Clamps
"U" Bolt Clamps
Sampson Post Brackets
Grey Iron Castings
Crown Blocks
Make-Up Posts
Pitmans
Pitman Oscillators
Fish Tail Bits
"C" Hooks
Belled Nipples
Drill Collars
Heater Heads
Casing Clamps
Sampson Post Braces
Forgings
Bull Plugs
Set Shoes
Casing Heads
Sprockets
Stuffing Boxes
Counter-Balance Weights
Whip Stocks
Pipe Line Strainers
Swedge Nipples

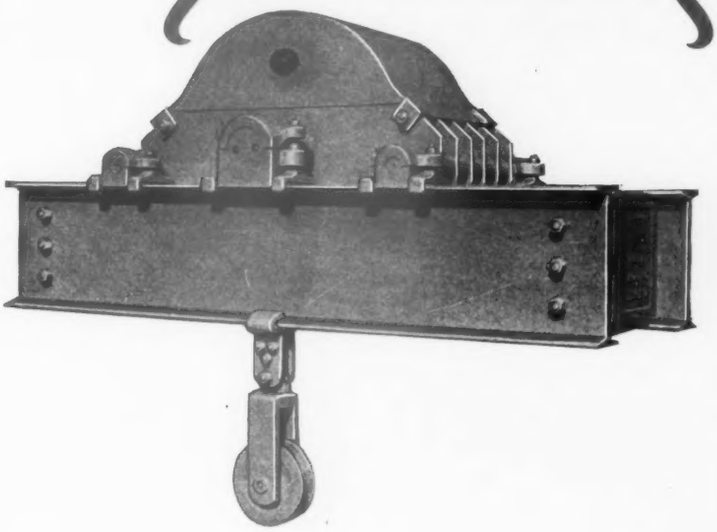
The manufacturers of "Greyhound" equipment, function as a harmonious organization. They work as a community of craftsmen. The universal use of these products has demonstrated that in skilled cooperation lies the greatest satisfaction to the purchaser.

BOYKIN

Machinery & Supply Company

Incorporated

HOUSTON — BEAUMONT, TEXAS



Boykin "Type D" Crown Block

This block was built as a companion to our famous 5-sheave traveling block, and when in combination with it you have a lifting unit that for speed—power—durability—ease on lines, is unrivaled in the oil industry.

Like the traveling block, it has extra large sheaves and bearing surfaces, with individual alemite connection to every American Heavy Duty roller bearing. The sheaves are adjustable after the block has been mounted on the derrick. Thus it is with ease and surety that you get perfect alignment of lines with the center of the hole.

A new and exclusive feature of the "Type D" Crown Block is the heavy guard that covers the sheaves, and minimizes hazardous dangers when greasing the block while in motion.

It is mounted on 18-inch I Structural Steel beams, with an adjustable dead line sheave that swivels.

If you are not now using these two blocks in combination, match these two as a unit, and get the utmost in service and efficiency from your lifting unit.

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices

PITTSBURGH, PA.

District Sales Offices

New York Boston Philadelphia Louisville Atlanta Houston New Orleans

Ocean Terminals

Boston (Beverly), Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

Details of Field Operations, First Half of 1929

COMPARATIVE FIELD STASTISTICS FOR OKLAHOMA—FIRST HALF 1929

County or Field	Completions		Producers		Gas Wells		Failures		Initial Production	
	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928	6 Mos. 1929	6 Mos. 1928
Beaver	...	1	...	...	...	...	...	1	...	...
Beckham	6	8	...	...	5	4	1	4	...	...
Blaine	1	...	...	...	...	...	1	...	...	...
Bryan	...	2	...	...	...	...	...	2	...	...
Butler	...	3	...	2	...	...	...	1	...	...
Caddo	5	10	4	6	...	1	1	3	76	569
Canadian	1	1	...	...	...	...	1	1	...	...
Carter	38	51	24	42	4	...	10	9	1,371	17,304
Cherokee	...	1	...	...	...	...	...	1	...	...
Cimarron	...	6	...	...	...	...	...	6	...	...
Cleveland	...	2	...	...	...	...	...	2	...	...
Coal	2	1	...	...	...	...	2	1	...	...
Comanche	4	2	...	...	...	...	4	2	...	...
Cotton	25	8	10	2	...	2	15	4	503	...
Creek	156	162	66	75	19	18	71	69	6,609	35,394
Dewey	1	...	...	...	...	...	1	...	...	...
Garfield	1	12	...	4	1	1	...	7	...	3,472
Garvin	8	7	3	1	...	...	5	6	85	51
Grady	24	92	2	10	14	62	8	20	200	13,976
Grant	6	10	...	4	1	4	5	2	...	...
Greer	...	1	...	...	...	...	...	1	...	...
Harper	1	...	...	...	...	...	1	...	...	...
Haskell	1	...	...	...	1	...	...	...	...	...
Hughes	27	14	12	6	7	1	8	7	4,785	1,880
Jackson	1	...	...	...	...	...	1	...	...	...
Jefferson	12	18	8	9	1	1	3	8	845	10
Johnston	...	...	...	...	...	...	...	...	...	...
Kay	44	95	8	4	13	34	23	57	1,080	31,822
Kingfisher	...	1	...	...	...	...	...	1	...	...
Kiowa	43	1	5	...	1	...	37	1	87	...
Latimer	3	...	...	...	2	...	1	...	...	...
Le Flore	2	...	...	...	1	...	1	...	...	...
Lincoln	6	8	...	5	...	1	5	2	...	203
Logan	20	23	10	10	1	3	9	10	18,733	448
Love	...	1	...	...	...	...	...	1	...	...
Major	...	1	...	...	...	...	...	1	...	...
Marshall	5	2	...	1	...	...	5	1	...	...
Mayes	...	...	...	...	...	...	...	...	...	...
McClain	4	...	...	...	...	...	4	...	...	...
McIntosh	1	2	...	...	...	...	1	2	...	30
Mitchell	...	2	...	1	...	...	...	1	...	...
Murray	...	...	...	...	...	...	...	...	...	...
Muskogee	63	163	18	48	7	17	38	98	897	570
Noble	2	2	...	...	1	...	1	2	...	...
Okfuskee	69	41	39	21	5	8	25	12	6,841	5,716
Oklahoma	7	...	1	...	5	...	1	...	6,565	40
Okmulgee	73	113	32	37	10	30	31	46	1,817	2,200
Osage	144	169	80	119	7	13	57	37	10,591	38,973
Pawnee	29	24	14	13	4	4	11	7	1,665	1,744
Payne	22	11	14	4	1	2	7	5	3,621	1,970
Pittsburg	3	5	...	...	2	5	1	...	...	...
Pontotoc	36	75	21	40	2	10	13	25	5,083	560
Pottawatomie	281	98	231	68	4	4	46	26	194,316	45,411
Rogers	...	5	...	...	...	...	...	5	...	...
Seminole	323	248	233	172	19	10	71	66	175,955	635,948
Sequoyah	2	3	...	...	1	1	1	1	...	...
Stephens	99	127	53	73	4	10	42	44	3,967	8,165
Texas	1	4	...	...	...	...	1	4	...	...
Tillman	2	...	...	...	...	...	2	...	...	...
Tulsa	9	61	1	29	1	6	7	26	15	2,756
Waggoner	37	49	4	9	15	6	18	34	156	351
Washita	...	...	...	...	...	...	...	...	...	...
Woods	1	...	...	...	...	...	1	...	...	...
Totals	1651	1746	893	815	159	258	599	673	445,866	318,865

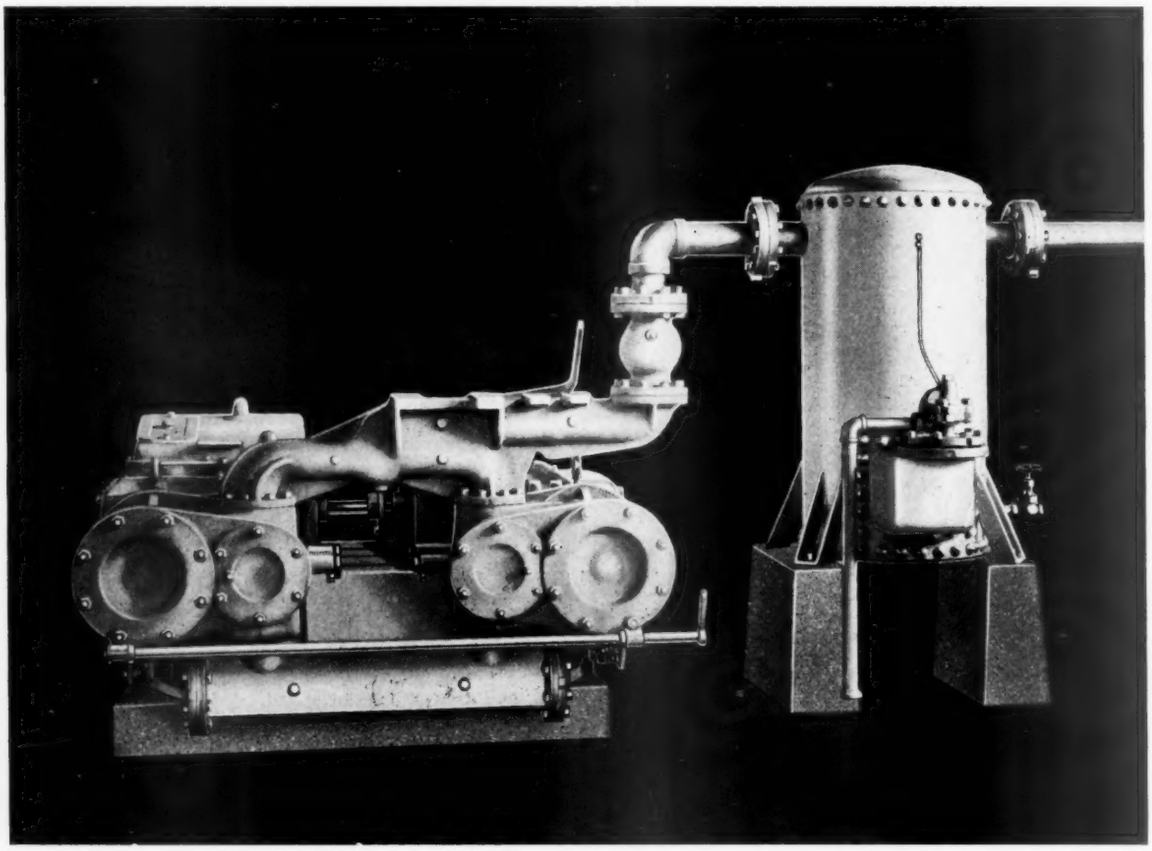
OKLAHOMA PRODUCTION SUMMARY

First 6 Months of 1929

Braman	641,500	Earlsboro	11,183,450
Blackwell	691,850	Duncan	1,244,200
Hubbard	357,150	Graham	792,550
Thomas	164,800	Fox	264,050
Tonkawa	1,897,850	Healdton	2,386,600
Garber	1,058,000	Hewitt	1,514,600
Burbank	3,945,000	Scholem-Alechem	2,380,950
Osage	4,627,650	Pearson	338,700
Cushing	3,678,400	Oklahoma City	773,500
Yale	1,317,960	Mission	3,217,550
Davenport	282,800	Carr City	109,650
Bristow	349,950	East Seminole	5,350
North Okmulgee	2,523,800	St. Louis	18,991,950
Lyons-Deaner	1,438,400	Allen	4,718,650
Cromwell	1,442,100	Maud	5,420,400
Papoose	620,110	Logan County	2,358,900
Wewoka	896,650	Others	9,945,200
Seminole	6,388,950		
Bowlegs	6,680,600	Total	121,432,370
Searight	1,897,800		
Little River	14,884,800	Total 1st 6 Mos. 1928	115,632,450

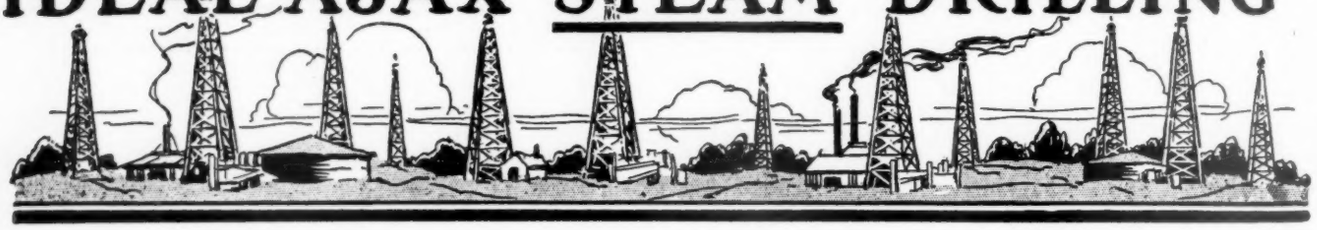
(*Continued on page* 114)

Drilling the Oil



The latest model IDEAL AJAX ROLLER BEARING STEAM ENGINE with new large-capacity steam separator, giving the AJAX new efficiency . . . new economy . . . new superiority.

IDEAL-AJAX STEAM DRILLING



Wells *of the* World

THROUGHOUT the world, Ajax Steam Engines have built an enviable reputation for dependable drilling. Ajax has been associated with nearly every outstanding development since the inception of power drilling.

Today, the Ideal Ajax with roller bearings is accomplishing work at speed and low cost never believed possible.

Cylinders with balanced piston valves assure better use of power and save vibration and wear. Several models of single and twin engines for cable and rotary drilling.

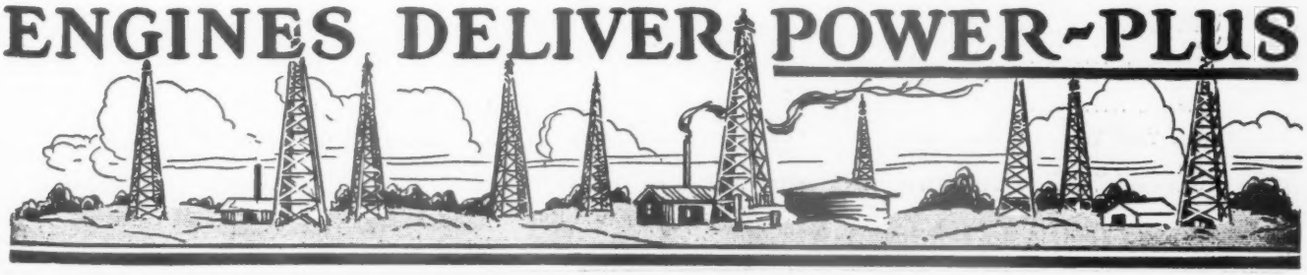
Ideal AJAX Roller Bearing Engine rigged up for the Prairie Oil Co. in Little River, Talley No. 3 in 14-7-6.

DISTRIBUTED BY
THE NATIONAL SUPPLY COMPANIES

in every oil field.

Made by
AJAX IRON WORKS
Corry, Pa.

ENGINES DELIVER POWER-PLUS



COMPARATIVE FIELD STATISTICS FOR TEXAS—FIRST HALF 1929

NORTH TEXAS

County or Field	Completions 6 Mos. 1929	Completions 6 Mos. 1928	Producers 6 Mos. 1929	Producers 6 Mos. 1928	Gas Wells 6 Mos. 1929	Gas Wells 6 Mos. 1928	Failures 6 Mos. 1929	Failures 6 Mos. 1928	Initial Production 6 Mos. 1929	Initial Production 6 Mos. 1928	Annual Production 6 Mos. 1929	Annual Production 6 Mos. 1928
Archer	318	239	142	115	..	..	176	124	7,514	7,664	3,159,750	3,764,600
Baylor	..	..	..	..	..	..	..	..	..	..	..	16,100
Burkburnett	13	35	7	23	..	..	6	12	165	162	1,644,100	2,165,450
Clay	29	9	13	2	..	1	16	6	316	19	..	85,050
Collin	..	1	..	..	..	..	..	1	..	..	..	..
Cooke-Montague	90	101	56	67	..	3	34	31	7,819	2,380	2,060,650	2,304,400
Denton	..	1	..	..	..	..	..	1	..	..	..	..
Electrea	71	83	46	53	..	..	25	30	2,030	1,597	2,362,900	2,178,400
Fannin	1	1	..	..	..	..	1	1	..	..	..	..
Foard	2	3	..	..	..	1	2	2	..	..	..	..
Grayson	8	4	..	..	3	..	5	4	..	..	..	..
Haskell	8	3	2	..	..	..	6	3	170	..	..	..
Jack	32	..	17	..	2	..	13	..	4,055	..	..	..
KMA-Iowa Park	140	124	102	68	..	..	38	56	9,930	1,972	1,070,900	471,100
Knox	2	1	..	..	..	..	2	1	..	..	..	..
Thockmorton	13	..	4	..	1	..	8	..	85	..	120,200	..
Wilbarger	226	134	176	94	..	3	50	37	25,388	16,160	4,830,250	2,144,100
Others	..	..	..	..	..	..	..	..	..	..	101,250	13,300
	953	739	565	422	6	8	382	309	57,372	29,954	15,350,000	13,142,500

SOUTHWEST TEXAS

Aqua Dulce	1	..	..	..	1	..	..	..	..	..	..	..
Bee	..	1	..	..	..	..	..	1	..	..	..	..
Caldwell	1	1	..	1	..	..	1	1	..	2,500 prod. incl. with Luling		
Cedar Creek	10	..	8	..	..	..	2	..	3,865	..	..	..
Cole	4	..	..	..	3	..	1	..	..	..	..	..
Dale	4	12	..	10	..	..	..	2	..	918	110,950	162,400
Duvall	26	11	17	1	1	6	1	4	3,705	10	..	(A)
Frio	1	..	..	..	..	..	1	..	..	..	..	..
Jim Hogg	15	13	11	7	..	..	4	6	765	710	..	(A)
Kleberg	1	..	..	..	..	..	1	..	..	..	..	..
Laredo Dist.	..	15	..	7	..	4	..	4	..	2,930	2,103,650	1,162,700
Live Oak	1	1	..	..	..	..	1	1	..	..	..	..
Luling	..	1	..	1	..	..	..	..	..	25	2,240,550	2,441,950
Lytton Springs	2	..	..	..	..	..	2	..	..	..	181,000	264,950
Nueces	2	..	..	..	2	..	..	..	..	..	..	..
Salt Flat	174	..	156	..	3	..	15	..	73,544	..	6,309,100	..
Somerset	..	..	..	..	..	..	..	..	..	..	193,200	137,550
Starr	1	..	..	..	..	..	1	..	..	..	..	..
Val Verde	..	1	..	..	..	..	..	1	..	..	..	..
Webb	44	4	16	..	17	3	11	1	3,455	..	..	..
Zapata	19	1	9	..	5	..	5	1	603	..	..	..
Zavalla	2	..	..	..	1	..	1	..	..	..	..	..
Wildcats	55	11	4	5	3	..	48	6	172	355	..	691,100
Others	..	..	..	..	..	..	..	..	..	..	705,950	72,800
Totals	359	74	221	32	43	15	95	27	86,109	7,328	11,844,400	4,241,550

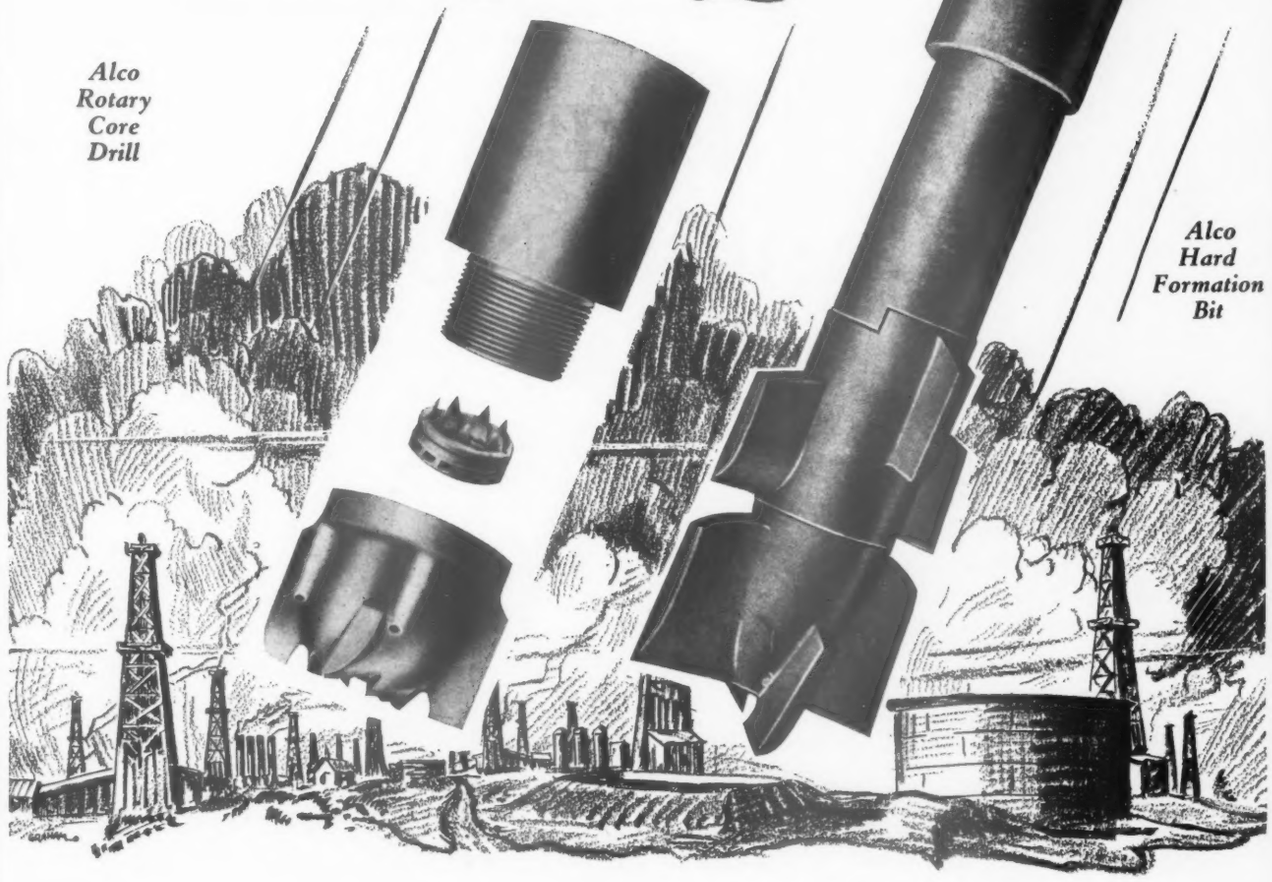
(a) Included with others.

TEXAS GULF COAST

Allen Dome	3	..	..	..	..	..	3	..	..	..	..	..
Barbers Hill	24	1	18	1	..	..	6	..	26,140	100	1,218,750	123,550
Batson	21	13	18	10	..	..	3	3	339	443	264,950	245,350
Big Creek	15	10	12	7	..	..	3	3	15,145	2,125	619,150	314,300
Big Hill	1	..	..	..	1	..	..	..	..	..	..	..
Blue Ridge	33	39	28	31	..	..	5	8	15,895	24,783	723,500	1,030,400
Boling	12	..	3	..	..	..	9	..	2,915	..	360,300	435,050
Clay Creek	11	..	7	..	..	..	4	..	5,560	..	..	..
Clemens Dome	2	..	..	..	..	..	2	..	..	..	..	..
Damon Mound	1	..	..	..	..	..	1	..	..	..	142,450	161,350
Davis Hill	1	..	..	..	..	..	1	..	..	..	..	..
Edna	1	..	..	..	1	..	..	..	..	..	..	..
Fannett	4	..	3	..	..	..	1	..	3,800	..	..	..
Goose Creek	12	15	9	12	..	..	3	3	855	1,507	1,122,750	1,318,100
Hankamer	1	..	1	..	..	..	..	..	700	..	..	..
High Island	7	8	4	5	..	..	3	3	438	2,150	..	(A)
Hull	25	34	22	24	..	2	3	8	9,210	8,840	1,733,300	2,128,000
Humble	7	..	7	..	..	..	..	..	21,193	..	1,126,200	252,700
Long Point	2	..	..	..	..	..	2	..	..	..	..	..
Lost Lake	3	..	..	..	1	..	2	..	..	..	..	..
Moores Field	2	..	1	..	..	..	1	..	800	..	..	..
Moss Bluff	2	..	..	..	..	..	2	..	..	..	..	..
Mykawa	1	..	..	..	..	..	1	..	..	..	..	..
Nash Dome	3	3	2	3	..	..	1	..	1,200	3,490	..	(A)
North Dayton	1	..	..	..	..	..	1	..	..	..	..	..
Nursery	2	..	..	..	..	..	2	..	..	..	..	..
Orange	13	27	10	19	..	..	3	8	1,263	8,105	543,050	806,750
Pierce Jct.	46	46	36	37	1	..	9	9	35,185	33,916	2,634,720	1,971,200
Port Neches	1	..	1	..	..	..	..	..	1,900	..	..	..
Raccoon Bend	22	..	17	..	2	..	3	..	6,428	..	577,950	..
Refugio	23	..	11	..	9	..	3	..	4,945	..	..	..
Saratoga	8	11	5	8	..	..	3	3	205	341	167,300	194,600
Sour Lake	7	15	6	8	..	..	1	7	108	590	506,850	639,800
South Liberty	67	6	53	5	..	..	14	1	19,014	4,325	1,126,200	635,250
Spindle Top	14	30	11	22	..	..	3	8	12,995	17,204	5,652,300	7,086,450
Stratton Ridge	1	..	..	..	..	..	1	..	..	..	..	..
Sugar Land	14	..	14	..	..	..	..	..	15,800	..	1,772,500	..
Washington Co.	2	..	1	..	..	..	1	..	5	..	331,550	..
West Columbia	1	3	1	3	..	..	..	..	200	770	1,232,000	1,516,900
Wildcats	56	80	2	13	..	1	54	66	4,025	7,988	..	..
Others	..	..	..	..	..	..	..	..	..	..	840,300	429,050
Totals	472	341	303	208	15	3	154	130	206,263	116,677	22,696,070	19,288,850
Grand Total Texas	3596	2874	1947	1525	240	184	1,409	1,165	2,225,651	1,689,100	131,240,470	121,650,300
Total Texas, Outside Gulf Coast	3124	2533	1644	1317	225	181	1,255	1,035	2,019,388	1,572,433	108,544,400	102,361,450

(*Continued on page* 118)

Partners!!
in drilling efficiency



A Soft Formation Core Catcher

This newest development of the Alco engineers is in advance of any core catcher on the market today. It is designed for drillers who have been losing cores in formations that would not hold together. Send for one now.

The Original Drilling Bit

Alco Hard Formation Bits are made with demountable cutter heads for quick and economical replacement. They are simple—rugged and safe and dig and dig and dig. Experienced drillers demand Alco Bits because they drill straight hole at less cost per foot.

ALCO OIL TOOL CO.
COMPTON, CALIFORNIA

Factories:
Compton, California
Houston, Texas

6101 Texas Ave., Houston, Texas

Service Shops:
Kettleman Hills
Ventura, Taft

What is it worth to you of EVERY wire-line

CORROSION RESISTING PAINTS
PORTABLE STEEL BUILDINGS
TREATED OIL FIELD TANKS

The "D-H" Wire Line Insuline No. 269 *Saves*

AFTER severe tests under practically every drilling condition known to the fraternity, we offer "The Sawtelle Wire-Line Lubricator" and "Insuline No. 269" as a most thorough and effective means of lubricating wire-lines.

Lines lubricated in this manner are absolutely protected clear to the core. Running in sulphur, alkaline or salt water—running in sulphur crude oil—or spooling indefinitely — will not cause strands to crystallize and break when they have this protection.

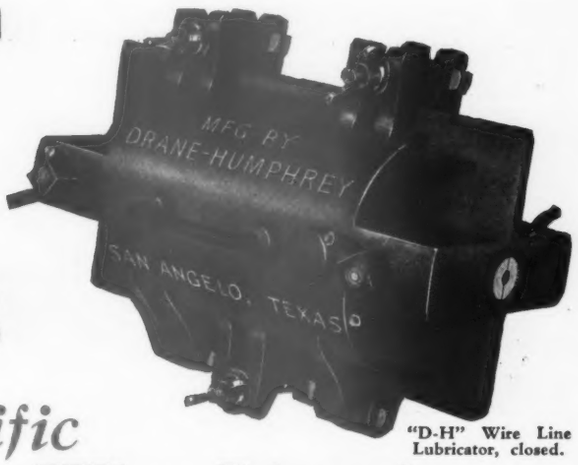
This lubricant also eliminates cut casing in crooked holes, by furnishing the line with a protective cushion. It is applied while running lines in or out of the hole.

Photo of tank of "Insuline No. 269," with pump and "D-H Lubricator" assembled for operation.

DRANE-HUMPHRE
San Angelo **Texas**

to MULTIPLY the life in your service?

Lubricator and Lines and Casing



"D-H" Wire Line Lubricator, closed.

—You KNOW the terrific wear and tear on Wire Lines!

—You KNOW the thousands of dollars every job costs you on this item ALONE!

"D-H" Wire Line Lubricator, open.

INSULINE No. 269 has wonderful heat-resistance and penetrating qualities. At a pressure of 2½ lbs. it thoroughly saturates the core, and coats the strands of a wire line, in four-fifths of the time required to do the same work with the finest petroleum oils.

In addition, a film is formed over the entire wire line which prevents the evaporation of lighter penetrating oils; and none of the petroleum products nor water will have the slightest tendency to dissolve this film or wash the ingredients out of the line. Therefore, this is practically a permanent protection.

Complete Equipment for Applying (as shown in photo on opposite page) and 55 gallons of Insuline No. 269 (enough to treat 30,000 feet of line) only

$200.00

F. O. B. San Angelo, or Fort Worth

Y COMPANY, INC.

Petroleum Building, Fort Worth

COMPARATIVE FIELD STATISTICS FOR TEXAS, FIRST HALF OF 1929

PANHANDLE

County or Field	Completions 6 Mos. 1929	Completions 6 Mos. 1928	Producers 6 Mos. 1929	Producers 6 Mos. 1928	Gas Wells 6 Mos. 1929	Gas Wells 6 Mos. 1928	Failures 6 Mos. 1929	Failures 6 Mos. 1928	Initial Production 6 Mos. 1929	Initial Production 6 Mos. 1928	Annual Production 6 Mos 1929	Annual Production 6 Mos. 1928
Armstrong	...	1	...	...	...	...	...	1	...	...	...	...
Bailey	...	1	...	...	...	...	...	1	...	...	...	...
Carson	24	13	17	2	5	10	2	1	4,690	335	1,146,550	1,311,450
Children	1	...	...	...	...	...	1	...	...	...	...	...
Cochran	1	...	...	...	...	...	1	...	...	...	...	...
Cottle	1	...	...	...	...	...	1	...	...	...	...	...
Dallam	...	2	...	...	...	...	...	2	...	...	...	...
Floyd	...	1	...	...	...	...	...	1	...	...	...	...
Gray	88	80	75	60	5	8	8	12	82,045	32,630	5,355,550	3,548,650
Hall	1	2	...	...	...	...	1	2	...	...	...	...
Hartley	1	1	...	...	1	...	...	1	...	...	...	...
Hutchinson	41	24	36	19	5	3	...	2	6,850	2,240	4,678,300	7,920,500
Lamb	...	1	...	...	...	...	...	1	...	...	...	...
Moore	17	1	11	...	4	...	2	1	3,455	...	...	...
Motley	2	...	...	...	...	...	2	...	...	...	...	...
Oldham	...	1	...	...	...	...	...	1	...	...	...	...
Potter	...	3	...	...	...	3	...	...	...	...	...	...
Sherman	...	1	...	...	...	...	...	1	...	...	...	...
Wheeler	40	18	2	1	35	16	3	1	650	60	130,250	193,900
Wildcats	...	2	...	...	...	...	...	2	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	343,350	21,000
Totals	217	152	141	72	55	50	21	30	97,690	35,265	11,654,000	13,095,500

EAST CENTRAL

Boggy Creek	3	...	1	...	...	...	2	...	20	...	542,550	...
Cedar Creek	1	...	1	...	...	...	...	...	75	...	...	...
Corsicana-Powell	...	...	...	...	...	...	...	...	...	...	1,550,850	2,144,450
Currie	...	...	...	...	...	...	...	...	...	...	84,400	97,950
Freestone	2	...	...	...	...	...	2	...	...	...	...	...
Limestone	5	...	...	...	...	...	5	...	...	...	...	...
Mexia	...	...	...	...	...	...	...	...	...	...	1,035,150	1,348,550
Navarro	2	...	...	...	...	...	2	...	...	...	...	...
Nigger Creek	...	...	...	...	...	...	...	...	...	...	106,800	255,150
Richland	...	...	...	...	...	...	...	...	...	...	77,800	100,800
Van Zandt	1	...	...	...	...	...	1	...	...	...	...	...
Wortham	...	...	...	...	...	...	...	...	...	...	219,750	358,050
Wildcats	...	1	...	...	...	...	...	1	...	...	...	...
Total	14	1	2	...	...	...	12	1	95	...	3,617,300	4,304,950

WEST TEXAS

Crane	10	17	9	16	...	...	1	1	2,160	8,750	8,857,400	15,123,150
Crockett	...	1	...	1	...	...	...	...	...	300	396,650	467,600
Fisher	3	...	1	...	...	...	2	...	50	...	...	...
Howard	114	42	112	38	...	2	2	2	60,485	15,602	7,843,000	887,600
Jones	35	6	26	6	...	...	9	...	5,815	1,235	1,008,850	231,000
Loving	4	...	4	...	...	...	...	...	1,000	...	...	...
Mitchell-Scurry	2	4	2	3	...	...	...	1	170	285	490,500	580,650
Pecos	53	104	42	103	...	...	11	1	276,915	720,655	16,105,600	9,118,450
Reagan	13	8	13	8	...	...	...	...	3,075	1,705	3,362,500	3,552,000
Upton	4	6	4	5	...	...	...	1	305	580	...	(A)
Ward	3	...	3	...	...	...	...	...	435	...	...	...
Winkler	139	165	127	157	...	3	12	5	499,505	700,480	28,319,950	27,274,900
Wildcats	154	122	11	8	6	2	137	112	3,223	740	...	...
Others	...	...	...	...	...	...	...	...	...	...	326,750	366,100
Totals	534	475	354	345	6	8	174	122	853,138	1,450,352	56,711,200	57,601,250

(A) Included with Crane County Production.

WEST CENTRAL

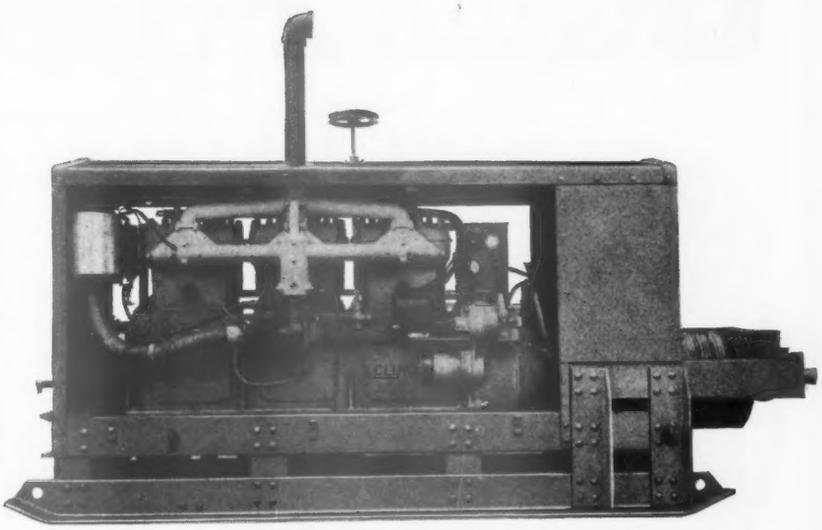
Brown	192	313	63	155	8	14	121	144	2,083	18,554	1,550,950	2,411,500
Callahan	86	46	29	8	2	4	55	34	884	200	686,050	704,900
Coleman	114	79	26	25	19	12	69	42	2,998	3,065	662,150	305,200
Comanche	7	7	4	2	1	2	2	3	105	60	...	...
Eastland	78	100	22	34	6	19	50	47	3,100	9,995	1,194,800	1,474,200
Erath	17	...	...	...	12	...	5	...	...	...	...	...
Fisher	1	...	1	...	...	...	...	...	200	...	...	...
Hood	2	...	...	...	...	...	2	...	...	...	...	...
Jack	...	44	...	14	...	...	...	30	...	675	347,850	264,250
McCulloch	6	5	...	...	1	1	5	4	...	...	...	...
Mills	1	...	...	...	...	...	1	...	...	...	...	...
Palo Pinto	18	14	1	3	10	3	7	8	35	90	70,600	85,000
Parker	...	1	...	...	...	...	...	1	...	...	...	...
San Saba	1	...	...	...	...	...	1	...	...	...	...	...
Shackleford	164	109	80	70	1	3	83	36	8,606	7,742	2,279,700	1,484,700
Stephens	42	41	12	12	8	6	22	23	778	1,660	1,160,100	1,407,350
Throckmorton	...	3	...	1	...	...	...	2	...	20	...	187,600
Young	252	267	119	115	...	3	133	149	4,100	7,319	1,291,500	1,541,400
Wildcats	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	123,800	109,550
Totals	981	1,029	357	439	68	67	556	523	22,889	49,390	9,367,500	9,975,700

EAST TEXAS

Angelina	1	...	...	...	...	...	1	...	...	...	...	...
Anderson	...	2	...	1	...	...	...	1	...	83	...	...
Cass	1	...	...	...	...	...	1	...	...	...	...	...
Harrison	13	18	...	3	13	15	...	...	...	36	...	...
Marion	1	1	1	1	...	...	...	...	15	5	...	...
Panola	38	19	...	2	33	17	5	...	...	10	...	...
Wildcats	12	22	3	...	1	...	8	22	2,080	...	...	...
Totals	66	62	4	7	47	39	15	23	2,095	134	...	...

(Continued on page 122)

SINKING THE DEEP ONES



Partial List of Climax Users. Each has from one to twenty Climax Engines

OIL COMPANIES

Magnolia Petroleum Corp.
Phillips Petroleum Co.
Sun Oil Company
Mid-Kansas Oil & Gas Co.
The Texas Company
Marland Oil Company
Roxana Petroleum Corp.
Gulf Refining Company
White Eagle Oil & Refining Co.
Standard Oil Co. of California
Landreth Oil Corp.
Roeser & Pendelton
Autrey Oil Co.
Herbert Oil Co.
California Petroleum Co.
Eastland Oil Co.
Condor Petroleum Co.
Prairie Oil & Gas Co.
Grayburg Oil Company
Milham Oil Corp.
Continental Oil Co.
Texas-Pacific Coal & Oil Co.
Yount-Lee Oil Co.
Ryan Consolidated Corp.
Denver Produc. & Ref. Co.
Union Oil Co.
Connell Oil Co.
Skelly Oil Co.
McCulloch Oil Co.
Mulberry Oil Co.
Bu-Vi-Bar Oil Co.
Twin State Oil Co.
Taylor Link Oil Co.
Fuhrman Petroleum Corp.
Helium Oil Company
Hansen Syndicate
Local Oil Company

CONTRACTORS

R. J. Wallace
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C. L. Dittman
F. M. Breech
Geo. Rinear
R. D. Buchanan
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Stedham & Thrasher
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CLIMAX Trade Mark Reg. U. S. Pat. Off.

CLIMAX *Paymaster* 6-cylinder drilling engines are continuing their leadership on deep drilling. The *Paymaster* drops the tools quickly and picks them up smoothly—and this "just right" performance means better control in treacherous holes, less cable trouble—*fewer fishing jobs.* In addition, the *Paymaster* engine eliminates the use of permanent foundations—the time and expense to put them in. Set a *Paymaster* on a couple of timbers, throw on the belt, tighten up the turnbuckles, and she's ready to go to work.

CLIMAX ENGINEERING COMPANY
75 WEST 18TH AVE. CLINTON, IOWA

DISTRIBUTED BY
THE NATIONAL SUPPLY COMPANIES

San Angelo, first in West Texas!

Hotel Hilton

The phenomenal growth of the city of San Angelo during the past six year period is the result of the prosperity and ideal conditions that have prevailed in the surrounding territory. Every section is dependent on some city ideally located for a distributing center—San Angelo is that center in West Texas. In keeping pace with the growth and demands of its Trade Territory San Angelo has built a city that now ranks first in West Texas.

Ample hotel facilities—six modern hotels with 800 rooms.
Bus schedules operating to all parts of the city.
Modern fire protection with electric fire alarm system.
Superior hospitals, clinics, tubercular sanitoriums.
Six elementary schools—two high schools—junior college.
School of fine arts—business college—private teachers of music, dancing, speech arts.

Central National Bank

Western Reserve Life Insurance Building

Eighteen fine churches representing the various denominations.

Excellent moving picture theatres. Forty-three acres of improved parks.

Wonderful fishing, hunting, swimming and picnicing on adjacent streams.

First in

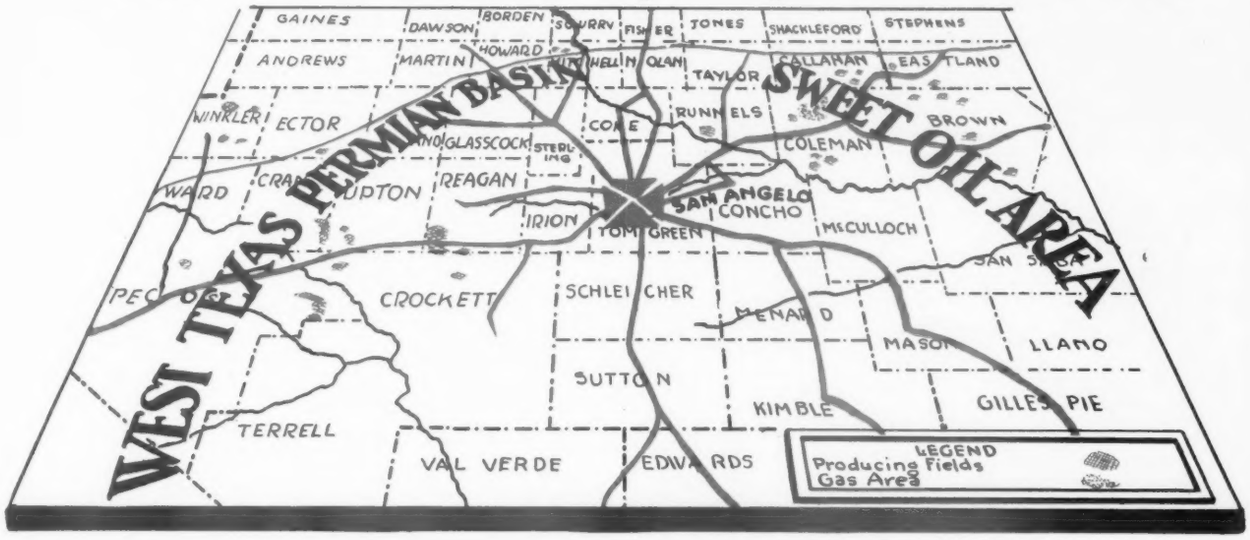
—Aviation
—Banking
—Building
—Cattle
—Oil
—Recreation
—Mohair and Goats
—Wool and Sheep
—Water

San Angelo National Bank

St. Angelus Hotel

✣ marks the spot!

from which this territory may best be served.



✣ represents SAN ANGELO

the only operating headquarters for both the West Texas Permian Basin and the Sweet Oil Area.

✣ marks the spot!

that is surrounded by—
16 producing counties,
4 major pools,
2,200 producing wells.
Greatest potential oil field in the world.

WEST TEXAS PRODUCTION, 1928

Daily Average Production, 1928—329,623 barrels

Total Production, 1928	120,632,993	"
Total Production, 1927	49,689,657	"
Increase	70,943,336	"
Total Production Texas 1928,	255,354,357	"
Total Production West Texas 1920 to 1929	193,810,931	"

✣ marks the spot!

where the oil man finds facilities to meet his every need and demand. San Angelo is the logical and natural center for the Permian Basin and Sweet Oil Region.

Write for data you desire

BOARD OF CITY DEVELOPMENT

San Angelo, Texas

COMPARATIVE FIELD STATISTICS FOR CALIFORNIA, FIRST HALF 1929

County or Field	Completions 6 Mos. 1929	Completions 6 Mos. 1928	Producers 6 Mos. 1929	Producers 6 Mos. 1928	Gas Wells 6 Mos. 1929	Gas Wells 6 Mos. 1928	Failures 6 Mos. 1929	Failures 6 Mos. 1928	Initial Production 6 Mos. 1929	Initial Production 6 Mos. 1928
Athens-Rosecrans	4	5	4	4	...	...	...	1	1,425	1,960
Belridge	9	3	9	3	...	...	...	...	535	375
Brea-Olinda	2	6	2	6	...	...	...	...	650	5,635
Cat Canyon	1	4	1	4	...	...	...	...	200	1,200
Coalinga	...	2	...	2	...	...	...	...	...	210
Dominguez	1	5	1	5	...	...	...	...	200	305
East Coyote	...	1	...	...	...	...	...	1	...	...
Elk Hills	...	...	...	...	...	...	...	...	...	...
Elwood-Goleta	4	2	4	...	...	...	...	2	17,200	...
Fruitvale	9	...	9	...	...	...	...	...	66,375	...
Huntington Beach	15	25	15	20	...	...	...	5	9,410	5,860
Inglewood	8	3	8	3	...	...	...	...	1,890	460
Kern Front	18	30	17	30	...	...	1	...	4,260	5,395
Lawndale	4	...	1	...	...	...	3	...	1,200	...
Long Beach	125	103	123	101	...	...	2	2	109,687	173,290
McKittrick	1	1	1	1	...	...	...	...	100	160
Midway-Sunset	6	12	6	11	...	...	...	1	3,675	3,990
Montebello	2	3	2	2	...	...	...	1	250	250
Poso Creek	8	3	7	1	...	...	1	2	2,125	500
Potrero	1	...	1	...	...	...	...	...	200	...
Richfield	6	8	6	6	...	...	...	2	1,575	1,855
Rincon	8	17	8	17	...	...	...	...	2,005	10,425
Round Mountain	5	5	5	5	...	...	...	...	1,274	1,955
Santa Barbara	1	...	1	...	...	...	...	...	1,200	...
Santa Fe Springs	190	3	190	1	...	...	...	2	612,087	225
Seal Beach	35	24	35	14	...	...	...	10	48,946	13,730
South Mountain	1	1	1	1	...	...	...	...	160	100
Torrance	...	...	...	...	...	...	...	...	...	...
Ventura Avenue	29	18	29	18	...	...	...	...	29,720	35,800
Wheeler Ridge	1	2	1	2	...	...	...	...	50	165
West Coyote	1	...	...	...	...	...	1	...	...	...
Wildcats	31	43	1	2	...	...	30	41	1,000	300
Totals	526	329	488	259	...	...	38	70	856,479	264,145

CALIFORNIA PRODUCTION SUMMARY

First 6 Months of 1929

Santa Fe Springs	32,494,000
Long Beach	32,603,000
Huntington Beach	8,210,100
Torrance	2,582,000
Dominguez	1,828,200
Rosecrans	1,158,100
Inglewood	4,558,100
Midway-Sunset	12,710,500
Ventura	10,137,700
Seal Beach	6,906,500
Elwood-Goleta	4,331,600
Kettleman Hills	609,900
Others	22,924,750
Total	141,054,450
Total First 6 Months 1928	113,365,200

FIELD STATISTICS FOR FIRST SIX MONTHS OF 1929
EASTERN STATES

NEW YORK

Field or County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Allegany	145	140	..	5	465
Total	145	140	..	5	465

PENNSYLVANIA

Allegheny	14	6	4	4	31
Beaver	7	4	2	1	26
Bradford	762	691	2	69	2,985
Butler	68	40	14	14	1,745
Center-Middle	37	36	1	..	142
Clarion	52	37	10	5	146
Greene	42	5	30	7	70
Venango	90	76	12	2	166
Washington	10	5	4	1	377
Westmoreland	1	..	..	1	...
Total	1083	900	79	104	5,688

NORTHWESTERN OHIO

Allen	8	7	..	1	130
Auglaize	1	1	..	..	10
Drake	1	1	..	..	8
Hancock	13	9	3	1	280
Hardin	2	..	1	1	...
Lucas	1	..	..	1	...
Mercer	5	3	1	1	12
Ottawa	1	1	..	..	6
Shelby	1	1	..	..	10
Seneca	17	7	3	7	94
Van Wert	1	1	..	..	8
Wood	9	6	..	3	82
Wyandot	2	..	1	1	...
Total	62	37	9	16	640
Total Ohio	1008	349	386	273	8,948

CENTRAL OHIO

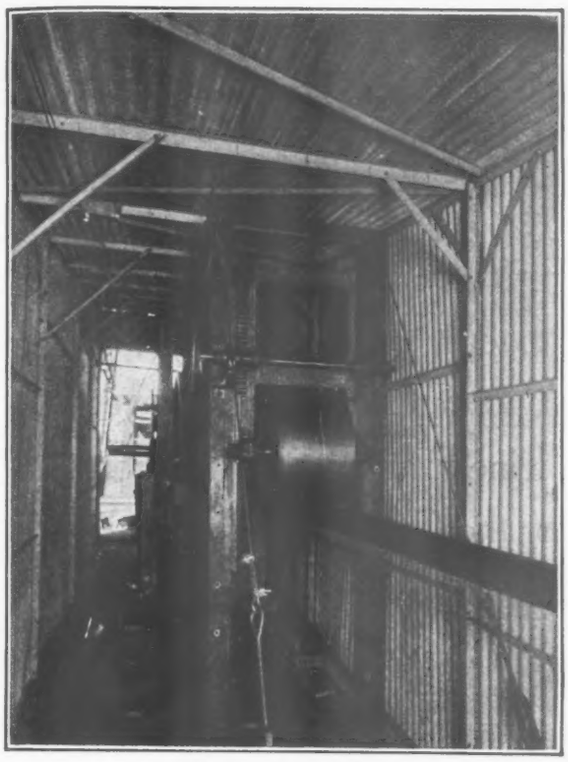
Field or County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Ashland	70	17	25	28	433
Ashtabula	3	..	3	..	...
Athens	73	6	48	19	13
Belmont	7	2	2	3	12
Columbiana	2	2	..	..	4
Coshocton	21	15	4	2	686
Cuyahoga	7	..	6	1	...
Fairfield	6	1	5	..	14
Gallia	3	..	3	..	...
Guernsey	23	6	6	11	177
Hocking	36	27	1	8	1,077
Holmes	26	5	12	9	95
Jackson	25	..	20	5	...
Knox	23	1	14	8	100
Lawrence	9	..	4	5	...
Licking	69	44	10	15	778
Lorain	18	..	12	6	...
Medina	21	5	8	8	66
Meigs	50	27	12	11	201
Muskingum	35	22	5	8	1,906
Perry	72	40	18	14	2,041
Richland	5	..	4	1	...
Stark	4	1	2	1	3
Summit	39	1	26	12	30
Tuscarawas	2	1	..	1	1
Vinton	12	4	4	4	42
Wayne	32	2	19	11	5
Total	693	229	273	191	7,684

SOUTHEASTERN OHIO

Belmont	3	2	..	1	11
Carroll	1	..	..	1	...
Jefferson	8	4	..	4	26
Harrison	3	2	1	..	7
Monroe	56	18	18	20	217
Morgan	57	2	51	4	83
Noble	42	22	5	15	88
Washington	83	33	29	21	192
Total	253	83	104	66	624

(*Continued on page* 126)

Happy Tightener for Beam Wells



Advantages of Happy Belt Tightener for Beam Wells

1. Permits use of endless belt, eliminating troublesome belt clamps.

2. Almost without exception, pumping belts first start wearing and fail at the clamps, beside a great amount of down time and trouble caused by belt clamp bolts breaking. An endless belt eliminates this and shut down time for cutting is eliminated.

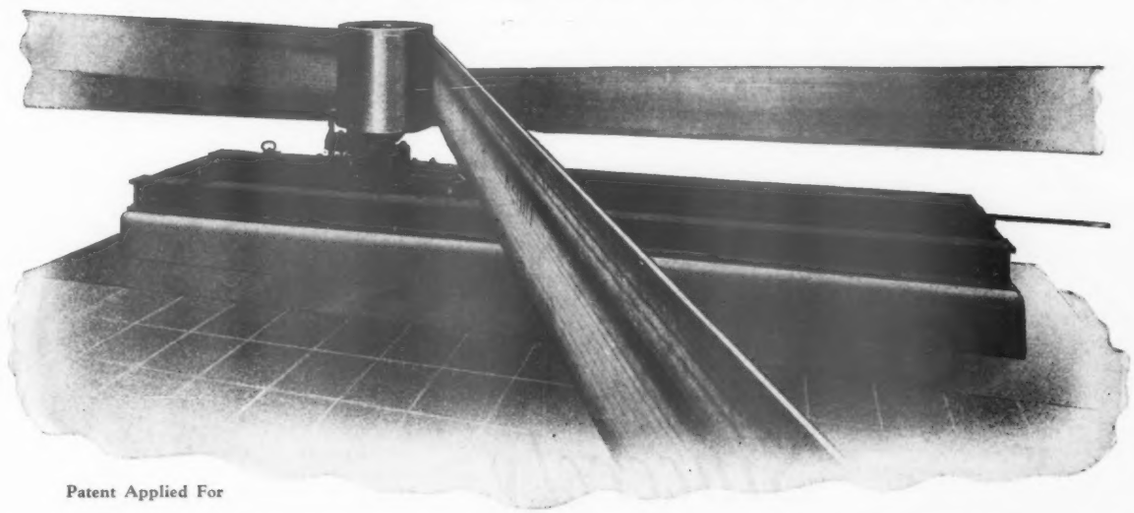
3. Increased wrap or arc of contact on clutch or driving pulley as well as band wheel, permitting belt to operate under less tension, thereby materially lengthening its life; allows shorter centers reducing length of belt and belt house. This saving in most instances, will pay for the tightener.

4. Easy to adjust. The pumper can tighten or loosen tension on the belt while in operation.

5. The Happy Belt Tightener acts as a guide for the belt, keeping it properly lined up on driving pulley and band wheel and acts as a shock absorber, transmitting a smoother stroke to the polish rod. Increased arc of contact allows belt to run more loosely.

6. Upkeep is minimum; pulley is mounted on ball bearings equipped with alemite system and requires greasing only two or three times a year.

The Happy Automatic Belt Idler for Band Wheel Powers



Patent Applied For

Advantages of Happy Automatic Belt Idler for Band Wheel Power

1. All guess work is eliminated when applying tension to slack side of belt, tension may be increased or decreased by adding or removing weights.

2. Any change in length of the belt, either on elongation because of change in load or shrinkage due to change in weather, is automatically cared for and pre-determined tension in the belt is never exceeded.

3. All stretch, during the life of the belt, is automatically taken up due to the 10 feet travel of the idler.

4. Pulley mounted on ball bearings, requires attention but two or three times a year, lubricated by Alemite high pressure fittings. Rollers are free running, also lubricated by Alemite fittings, permitting easy movement on tracks. All points of wear lubricated while in operation.

5. Pulley is universally adjustable on ball and socket joint.

6. Much shorter centers between countershaft or engine and band wheel are permissible, thus reducing length of building and length of belt—this taken into consideration will materially bring down the cost of installation.

7. Endless belt is recommended.

HAPPY BELTING COMPANY

TULSA, OKLAHOMA . . . BRANCHES { EL DORADO, ARKANSAS SEMINOLE, OKLAHOMA

We Thank

It had been our intention to reply with a personal letter to those recipients of the Composite Catalog of Improved and Standard Oilfield Pipe Line Equipment who wrote us expressing appreciation for the Catalog, and many of whom were exceedingly complimentary in their statements concerning it.

However, we have literally been deluged with letters. They have come from all sections of the United States and are now beginning to come in from foreign fields.

Sincerely,

The Gulf Publi

(*Catalog*

HOU

All of You

Therefore, instead of acknowledging your letters with a personal reply, we are taking advantage of The Oil Weekly to express to you our appreciation. The good things you had to say naturally please us very much. The constructive criticism given by others is equally appreciated. All of your expressions will aid us materially in compiling the next edition of this Composite Catalog which will have a publication date sometime next spring.

We are glad that you like the Composite Catalog. We hope that you continue to use it as your letters indicate you are now doing. We shall appreciate further criticism from you as your use continues.

shing Company
Division)
STON

WEST VIRGINIA

Field or County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Boone	31	3	28	..	14
Braxton	2	..	..	2	...
Cabell	9	..	9	..	...
Calhoun	64	8	51	5	71
Clay	13	9	4	..	143
Doddridge	9	3	4	2	18
Gilmer	40	15	21	4	385
Hancock	3	2	1	..	7
Harrison	12	..	12	..	...
Jackson	14	11	1	2	217
Kanawha	12	2	9	1	15
Lewis	5	..	4	1	...
Lincoln	52	1	50	1	4
Logan	8	..	7	1	...
Marion	15	1	11	3	2
Marshall	9	..	5	4	8
Mingo	8	2	6	..	13
Monogalia	10	1	9	..	25
Pleasants	6	2	1	3	6
Putnam	5	..	4	1	...
Ritchie	62	20	23	19	142
Roane	41	16	23	2	794
Roanoke	1	..	1	..	...
Tyler	15	5	4	6	18
Upshur	1	..	1	..	...
Wayne	10	..	9	1	...
Wetzel	13	3	6	4	7
Wirt	4	4	..	..	12
Wood	11	5	2	4	40
Total	485	113	306	66	1,941

KENTUCKY

Allen	33	13	..	20	49
Barren	5	5	..	..	53
Breckenridge	2	..	..	2	...
Caldwell	1	1	..	..	15
Clay	3	..	2	1	...
Daviess	203	121	5	77	4,492
Estill	21	16	..	5	41
Floyd	1	..	1	..	...
Hancock	14	4	3	7	44
Hardin	2	..	..	2	...
Henderson	6	6	..	..	92
Hopkins	4	..	1	3	...
Johnson	1	1	..	..	15
Knox	1	..	..	1	...
Lee-Owsley	4	1	2	1	5
Magoffin	17	15	..	2	194
McLean	5	2	..	3	23
Menifee	1	1	..	..	6
Muhlenberg	1	1	..	..	200
Ohio	241	176	9	56	9,061
Pike	1	..	1	..	...
Powell	1	1	..	..	6
Rowan	1	..	1	..	...
Simpson	1	..	..	1	...
Trigg	1	..	1	..	...
Warren	17	9	2	6	27
Wayne	17	7	..	10	22
Webster	5	4	1	..	83
Wolfe	2	2	..	..	15
Total	612	286	29	197	14,443

INDIANA

Crawford	1	..	..	1	...
Gibson	22	5	5	12	76
Grant	1	..	..	1	...
Green	1	..	..	1	...
Hancock	1	..	1	..	...
Henry	1	..	1	..	...
Jay	1	1	..	..	25
Marion	2	..	1	1	...
Pike	13	3	6	4	45
Rush	1	..	1	..	...
Spencer	14	7	..	7	142
Steuben	1	1	..	..	5
Sullivan	6	3	1	2	40
Vanderberg	1	..	..	1	...
Vigo	3	3	..	..	255
Warwick	2	..	..	2	...
Total	71	23	16	32	588

ILLINOIS

Clark	4	2	..	2	4
Clay	1	..	..	1	...
Crawford	13	10	1	2	89
Cumberland	1	..	..	1	...
Lawrence	9	5	..	4	454
Marion	1	..	..	1	...
Monroe	1	..	..	1	...
St. Clair	23	15	..	8	1,841
Wabash	26	13	..	13	524
Total	79	45	1	33	2,912

MICHIGAN

Field or County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Isabelle	7	7	..	..	1,993
Huron	1	..	..	1	...
Kent	1	..	..	1	...
Manistee	1	..	..	1	...
Mason	1	..	1	..	...
Midland	8	2	..	6	1,355
Muskegon	216	157	16	43	68,716
Newyago	3	..	1	2	...
Oceana	2	..	..	2	...
Ottawa	2	..	..	2	...
St. Clair	4	..	..	4	...
Total	246	166	18	62	72,064

TENNESSEE

Clay	2	2	..	..	60
Madison	1	..	..	1	...
Total	3	2	..	1	60

MISSISSIPPI

Calhoun	1	..	..	1	...
Clark	1	..	..	1	...
Itawamba	1	..	..	1	...
Jackson	1	..	..	1	...
Lee	1	..	..	1	...
Rankin	1	..	..	1	...
Simpson	1	..	..	1	...
Stone	1	..	..	1	...
Washington	1	..	..	1	...
Total	9	..	..	9	...
Total Eastern States	3741	2124	835	782	107,109
Total 1st 6 Mos. of 1928	2819	1607	645	567	44,232

Total Production 6 Mos., 1929 20,251,050
Total Production 6 Mos., 1928 19,569,000

KANSAS

Barber	2	..	1	1	...
Barton	1	..	..	1	...
Butler	55	33	..	22	4,956
Chase	1	..	..	1	...
Chautauqua	2	1	..	1	45
Cloud	1	..	..	1	...
Coffey	9	..	3	6	...
Cowley	46	10	10	26	3,855
Edwards	1	1	..	..	40
Elk	14	7	..	7	407
Ellis	12	6	..	6	735
Franklin	1	..	..	1	...
Greenwood	61	32	2	27	4,335
Harvey	9	..	2	7	...
Jefferson	1	..	..	1	...
La Bette	1	..	..	1	...
Lyon	1	..	..	1	...
Marion	12	7	1	4	1,470
McPherson	6	2	..	4	510
Mitchell	1	..	..	1	...
Morris	3	..	2	1	...
Nemaha	1	..	..	1	...
Osage	4	..	..	4	...
Phillips	1	..	..	1	...
Pottawatomie	1	..	..	1	...
Rooks	3	..	..	3	...
Rush	3	..	..	3	...
Russell	17	11	..	6	1,005
Saline	1	..	..	1	...
Sedgewick	87	54	..	33	39,695
Sherman	1	..	..	1	...
Stevens	2	..	1	1	...
Sumner	11	4	2	5	1,700
Wabunsee	2	..	..	2	...
Wilson	1	..	..	1	...
Woodson	4	1	..	3	200
Total	379	169	24	186	58,953
6 Mos. 1928	549	253	45	251	62,833

KANSAS PRODUCTION SUMMARY
First 6 Months of 1929

Greenwood	3,866,600
Florence	173,000
Peabody	532,450
El Dorado	2,256,800
Augusta-Fox-Bush	531,450
Rainbow Bend	188,700
Russell	600,050
Churchill	1,260,800
Oxford	973,550
Sedgewick	3,406,000
Others	5,252,470
Total	19,041,870
6 Mos. 1928	19,934,750

(*Continued on page* 130)

The Quality you expect *in any* Bethlehem Product

Bethlehem maintains at Los Angeles, Cal., and at Houston, Tex., well-assorted stocks of line pipe, ready for immediate shipment. Both threaded and coupled and plain-end pipe are included in these stocks.

The quality found in Bethlehem Steel Pipe is of the same high standard that you naturally expect to find in any Bethlehem product. Made by thoroughly experienced men, in the most modern equipped mills, from steel especially selected for the purpose, Bethlehem Steel Pipe rigidly adheres to the Bethlehem Standard of Quality.

The high quality of Bethlehem Pipe cannot be surpassed. The product of an organization with more than 50 years' experience as manufacturers of quality steel and steel products, Bethlehem Pipe reflects the maker—the background of this experience.

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General Offices: **BETHLEHEM, PA.**

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Bethlehem Steel Export Corp., 25 Broadway, New York City
Sole Exporters of our Commercial Products

BETHLEHEM STEEL PIPE

Promoting Fellowship in the Oil Industry

Organized for the purpose of broadening acquaintances in the Oil Industry in North Texas, the Dallas Wildcat Committee of the Texas Division of the Mid-Continent Oil and Gas Association has already achieved its purpose.

A greater degree of confidence and better understanding has come about and through social relationship oil men in Dallas and surrounding territory are coming together as friends as well as business associates with the result that a better and brighter era already is at hand. Thus is being promoted the best interests of the industry.

DALLAS WILDCAT COMMITTEE
of the Texas Division of the

Mid-Continent Oil and Gas Association

DALLAS, TEXAS

ROESER & PENDLETON, Inc.

Manufacturers of Natural Gasoline
Producers of Petroleum

613 Fort Worth Club Building
FORT WORTH, TEXAS

The Revolutionizing factor in Modern drilling

UNTIL recently excessive friction was apparently the one insurmountable problem of deep rotary drilling. As depths were increased in search of deeper sands this problem intensified and engineers despaired of defeating it. Every manner of device was conceived to reduce drill pipe friction—except the *simplest*—until the advent of Bettis Protectors. Prior to their introduction drill pipe friction was the principal underlying cause of twist-offs, water breaks, excessive fuel and power consumption, and countless other hindrances experienced in modern rotary drilling. With revolutionary effect Bettis Protectors readjusted drilling practice and are recognized as the outstanding factor in practical drilling to the greatest depths.

No specialty has ever been introduced that was more enthusiastically accepted by the Industry. This is indicated in the fact that more than 95% of all deep wells completed or drilling during the past 18 months have been Bettis-equipped. Use of these Protectors proved so successful in deep rotary drilling that they were quickly adapted to shallower drilling with equally gratifying results. Since their advent more than 170,000 have been installed—and the drilling string without Bettis-protection is now an exception seldom seen in any field.

The fact that Bettis Protectors are used in the Worlds' deepest wells where only the finest equipment is used, and have been adopted as standard equipment by almost every successful drilling operator, is indisputable evidence of the merit of the Product.

Consider the simplicity of Bettis Protectors. They consist of a single piece of solid, homogeneous, grainless rubber, molded into shape by a highly developed process.

No metal is used. No seams are required. No hinges or pins are attached. No extra gadjets are needed because the specially processed rubber performs every function desired, that of clinging to the drill pipe and serving as a resilient cushion so that the drill pipe, joints and collars can never contact the casing. They are installed directly upon the drill pipe or in the grooves of Hopkins Anti-friction Tool Joints and Collars. The diameter of the Protectors is slightly larger than that of the tool joints and collars. They are *lubricated* by the mud in the well. The special Bettis rubber has greater resistance to abrasive action than any other rubber or material known and the Protectors actually outlast the drill pipe. The rotary mud, serving as a lubricant, maintains a perfect film between the protecting rubber rings and the casing. By installing the Protectors throughout the pipe a resilient cushion is provided so that 100% protection is given to the drilling string and casing. But there are many other advantages offered.

"Best bet yet"

Fully Patented

Patterson-Ballagh Corp.
Insurance Exchange Building,
Los Angeles

Mid-Continent Distributors:
Bettis Sales Co.,
616 Public National Bank Bldg., Houston
New York Office: 39 Cortlandt St.

Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; New York City.

Bettis Protection
a necessity!

ARKANSAS

Field or County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Ashley	1	..	..	1	...
Bradley	3	..	..	3	...
Calhoun	1	..	..	1	...
Chicot	2	..	..	2	...
Clark	1	..	..	1	...
Drew	1	..	..	1	...
Johnson	2	..	1	1	...
Miller	1	..	..	1	...
Nevada	4	3	..	1	85
Ouachita	21	12	..	9	1,126
Union	75	42	9	24	13,734
Wildcats	42	8	2	32	506
Total	154	65	12	77	15,451
6 Mos. 1928	107	53	7	47	34,858

ARKANSAS PRODUCTION SUMMARY
First 6 Months of 1929

El Dorado	846,700
Champagnolle	1,677,450
Smackover Light	1,155,200
Smackover Heavy	8,968,750
Stephens	182,750
Nevada	222,300
Lisbon	258,350
Others	18,100
Total	13,382,050
Total 1st 6 Mos. 1928	16,422,150

NORTH LOUISIANA

Field or County—	Completions	Producers	Gas Wells	Failures	Initial Prod.	Monthly Prod.
Belleview	..	..	..	..	...	123,050
Bienville	3	..	2	1	...	...
Bossier	14	1	4	9	5	.....
Caddo	38	19	3	16	952	2,102,950
Claiborne	1	..	..	1	...	...
Cotton Valley	..	..	..	..	...	335,450
DeSoto-Red River	15	4	3	8	145	709,200
E. Carroll	2	..	1	1	...	...
Elm Grove	..	..	..	..	...	110,150
Franklin	1	..	..	1	...	...
Grant	2	..	..	2	...	...
Haynesville	..	..	..	..	...	971,950
Homer	..	..	..	..	...	727,650
La Salle	10	5	..	5	530	...
Madison	2	..	..	2	...	...
Morehouse	19	..	17	2	...	...
Ouachita	38	1	37	..	19	...
Pleasant Hill	..	..	..	..	...	86,300
Richland	19	..	16	3	...	...
Sabine	6	2	1	3	25	...
Tensas	1	..	..	1	...	...
Union	9	..	9	..	...	...
Urania	..	..	..	..	...	1,056,900
Webster	15	3	9	3	249	...
Wildcats	48	7	10	31	3,572	...
Others	..	..	..	..	...	43,450
Total	243	42	112	89	5,497	6,467,050

LOUISIANA GULF COAST

Anse La Butte	3	..	..	3	...	...
Bay Coon Road	1	..	1	..	...	...
Bayou Bouillon	4	..	..	4	...	60,800
Bayou Blue Dome	1	..	..	1	...	...
Bayou Des Glaise	1	..	..	1	...	...
Black Bayou	6	3	..	3	475	...
Darrow Dome	1	..	..	1	...	...
Dog Lake Bayou	1	1	..	..	4	...
E. Hackberry	9	5	..	4	3,175	742,450
Edgerly	8	6	..	2	510	156,850
Evangeline	12	7	..	5	5,445	217,400
Garden Island Dome	1	..	..	1	...	...
Hackberry	34	23	..	11	8,845	313,950
Lockport	10	7	..	3	3,250	753,550
Loreauville	4	..	..	4	...	...
Port Barre	1	..	..	1	...	...
Sorrento	3	..	..	3	...	92,100
So. Calcasieu Lake	1	..	..	1	...	...
Starks Dome	4	2	..	2	190	...
Sulphur	12	3	..	9	3,300	441,600
Sweet Lake	2	2	..	..	460	90,350
Thibodaux	5	..	..	5	...	...
Vermillion Bay	1	..	..	1	...	...
Vinton	13	10	..	3	4,685	762,650
Wildcats	10	1	..	9	65	...
Others	..	..	..	..	...	109,850
Total	148	70	1	77	30,404	3,741,550
Total Louisiana	391	112	113	166	35,901	10,208,600
6 Mos., 1928	376	96	132	148	45,151	11,418,650

ROCKY MOUNTAIN STATES PRODUCTION SUMMARY
First Six Months of 1929

WYOMING

Salt Creek	5,711,500
Grass Creek	410,400
Elk Basin	145,950
Big Muddy	489,700
Lost Soldier	619,450
Rock Creek	430,900
Lance Creek	51,300
Oregon Basin	547,230
La Barge	269,100
Others	711,050
Total	9,386,580

MONTANA

Cat Creek	256,100
Sunburst	1,131,850
Pondera	495,800
Others	10,600
Total	1,894,350

COLORADO

Moffats	219,750
Ft. Collins	455,000
Florence	197,850
Others	384,800
Total	1,257,400

NEW MEXICO

Table Mesa	23,100
Artesia	170,450
Hogback	66,550
Rattlesnake	141,250
Others	50,150
Total	451,500
Total Rocky Mountain States	12,989,830
Total 1st 6 Mos. 1928	14,392,850

HEYDRICK MAPS

New West Texas Combinations

Scale: 10,000 feet, 1 inch

These are photo-reductions of 4000-foot scale county ownership maps matched together and each combination covers from eight to twelve counties. These can be joined together and mounted as one large wall map.

On cloth: $15.00 each; paper, $10 each.

Write for descriptive matter concerning these and other HEYDRICK maps.

Heydrick Mapping Company

WICHITA FALLS, TEXAS

Branch Office: Fort Worth, Texas

Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

California Production Decline Aids Crude Situation

A DECLINE of 2300 barrels in California's daily average production last week proved to be an encouraging factor in the general crude situation, confining the gain for the United States to only 2200 barrels. Total daily average production for the week ending July 20 was 2,893,950 barrels. It is apparent, however, from late reports received from California that drilling continues at an excessive rate, indicating that operators there intend to go the limit prior to launching of the new gas waste law. The decline registered by California was the result of decreased output of Long Beach, Huntington Beach, Ventura, Seal Beach and Elwood, which more than offset a gain of 2000 barrels at Santa Fe Springs. It is particularly encouraging in this connection to note that gains in Santa Fe Springs production are becoming less pronounced, indicating that the peak of that field is being approached.

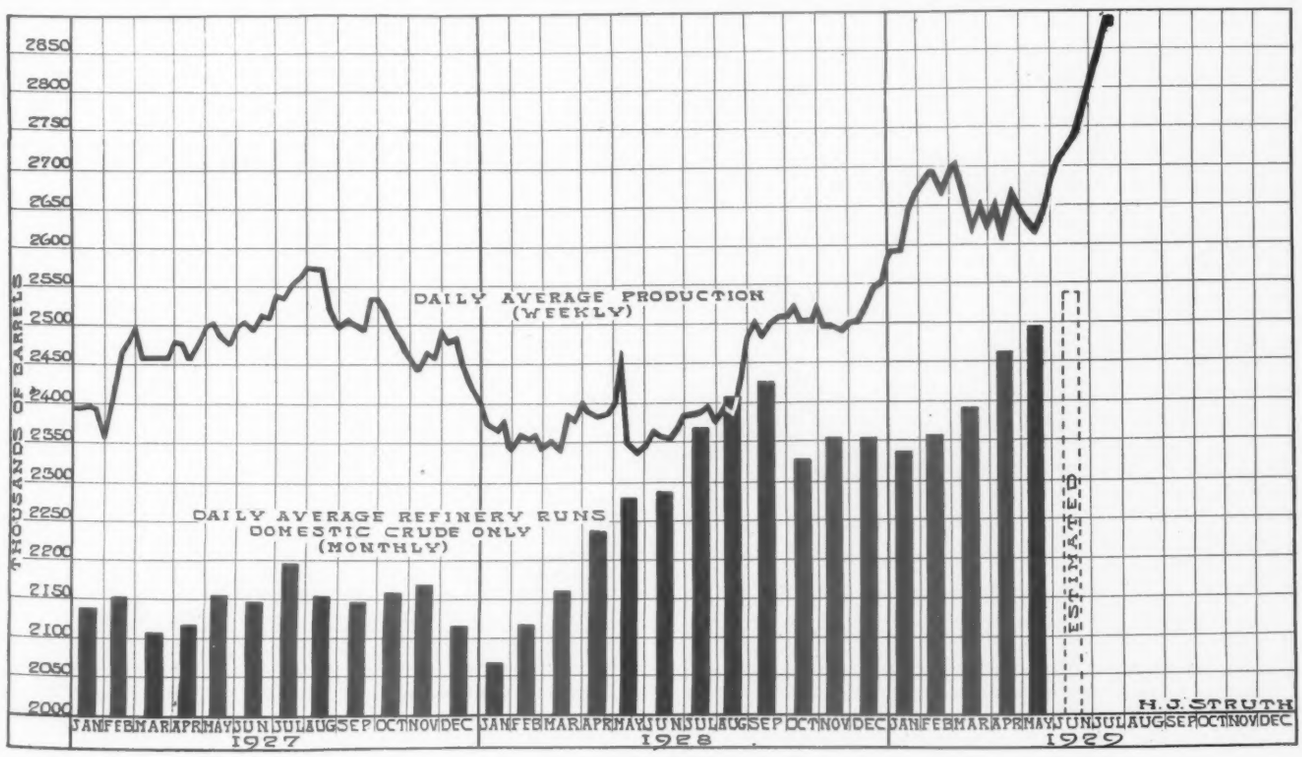
HOW LAST WEEK'S DAIY AVERAGE PRODUCTION COMPARES WITH AVERAGE OF 1928

	Daily Av'ge Year 1928 (Bureau of Mines Data)	Daily Av'ge July 20, 1929 (A. P. I. Wkly Prod. Rept.)	Excess
Oklahoma-Kansas	786,585	842,700	56,115
Texas-Louisiana-Arkansas	849,205	975,100	125,895
California	633,831	880,300	246,469
Balance of United States..	190,391	195,850	5,459
Total United States....	2,460,012	2,893,950	433,938
Mexico-Central and South America	561,339	609,249[2]	47,910
Grand total.....	3,021,351	3,503,199	481,848

[2]As of March 30, 1929—latest date available.

Compared with the daily average of last year, excess production is now at the rate of 433,938 barrels a day, of which California's share amounts to 246,469 barrels. All things considered, there appears to be some hope for a decline in production in the near future. This anticipated decline may take place first in California, followed by a gradual slump in Oklahoma. If this materializes, the industry may be able to sustain present market prices through the balance of this year. It is, however, believed that whatever declines take place will not be adequate to relieve the supply situa-

DOMESTIC PRODUCTION AND REFINERY RUNS



Details on Critical Fields

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	599	3,082,945	5,147	611	142,660	233[1]	4	12
Church & Fields	189	203,465	1,077	186	23,710	127	1	8
Gulf-McElroy	75	57,530	767	74	12,550	170	.	3
Yates	321	2,104,980	6,558	315	141,440	449[1]	4	19
TEXAS PANHANDLE—								
Gray County	401	230,450	575	386	56,810	147	25	102
OKLAHOMA—								
Seminole[2]	2,553	2,873,322	1,125	1,995	373,125	187	57	178
CALIFORNIA—								
Santa Fe Springs[3]	262	970,500	3,704	153	270,000	1,771	29	210

[1]Production partially pinched.
[2]St. Louis now included in Seminole.
[3]Includes deep zone production only. For field total add 210 wells and 24,000 barrels.

tion sufficiently to prevent a softening tendency in the general crude market during the fall. In this connection, it is well to point out that the reductions announced last week for Pennsylvania grades have no material bearing upon the general crude market, being the result of a purely local situation wherein former prices were unjustified. It will be remembered that attention was called in this section some time ago to the fact that the series of mark-ups in Pennsylvania crude were considerably overdone and were not justified. Subsequent developments, while delayed longer than expected, have adjusted this unbalanced situation. In fact, it would not be surprising to learn of another moderate cut before long. Outside of this area, the crude market can be considered fairly strong, with the possible exception of California. The only thing that prevents a cut there is that most operators continue to be optimistic over the possibility of a natural decline and believe that the new gas law will soon effect a more balanced situation.

The June report of the American Petroleum Institute indicates that California production was 44,906 barrels per day above May, while stocks of all oils on the Pacific Coast increased during that month to 165,270,399, a gain of 5,475,590 barrels. Compared with June, 1928, California stocks are now nearly 25 million barrels up. This alone indicates the unfavorable situation that exists in California and should prompt determined action in every flush field of the state.

June Stock Increase

According to returns made to the American Petroleum Institute, pipe line and tank farm stocks of crude east of the Rocky Mountains increased 1,352,000 barrels during June. It is expected, however, in view of potential requirements during July and August, that crude stocks will show somewhat of a decline during those two months. This will probably be offset during the remainder of the year by further gains which will result in a net gain for the year of at least 30 million barrels; and much of this gain will undoubtedly be attributed to overproduction in California.

Production is still holding its own in California and only a gradual decline at best is expected during the next few weeks. In anticipation of a cut back after August 31, operators are still producing their wells at the highest possible rate. Light oil is going into storage and, though official figures for July 1 are not yet available, total stocks are expected to show a peak for all time. The former peak storage was early in 1926, when a total of slightly more than 160,000,000 barrels was recorded. The total now includes considerably less light oil than the peak of 1926, but a still greater surplus of other stocks exist.

There is still a chance that operators will reach an agreement to curtail operations at Kettleman Hills, but since it takes a unanimous consent to effect a partial shutdown, a slip could easily occur. The government is using every means at its command to cause a suspension of operations, but a compromise will be acceptable.

With a production of almost 300,000 barrels, Santa Fe Springs is the chief source of worry. Just how long the market can absorb this large surplus remains to be seen, but a continued overproduction will place the crude structure in a much weaker condition. The fact that operators who previously have had some difficulty in obtaining a supply of refinable oil have been paying a small premium for this crude has helped to stabilize the market. When these wants are filled, the posted price should be more in evidence. The leading purchasing company in other fields has bought a smaller percentage of Santa Fe crude than it otherwise would have done, due to the fluctuations in spot prices and the fact that it never pays above the posted price. If the needs of the smaller companies are completely satisfied, this dominating company may obtain more oil than it wants at the posted price. Such a condition would jeopardize the market.

Wholesale and service station prices of gasoline have shown no change in California, but there is a very free supply of gasoline at refineries. Exports are satisfactory, but Canal shipments have shown some irregularity. Fuel oil is plentiful and offered at a price considerably below the posted figure.

Petroleum engineers have estimated that California production will remain above 800,000 barrels for the remainder of the year, with the possible exception of December. Such an average is far above the actual demand and means that both light and heavy oil will be stored.

Oklahoma

Production of the Asher Pool, in Oklahoma, showed an increase last week of 2900 barrels, the total of that field now aggregating 12,650 barrels daily. The only other important gain registered was in the Oklahoma City pool where production increased 1750 barrels. Declines were again recorded in Seminole, Little River, Earlsboro, St. Louis and Mission, aggregating 9350 barrels. In Kansas, the Sedgewick County pool registered a gain of 3250 barrels a day, bringing the total of the field up to 36,500 barrels. Combining the totals of both Oklahoma and Kansas resulted in a net gain of only 500 barrels, making the total excess over last year's daily average 56,115 barrels.

The trend of the Oklahoma market depends largely on new fields. A very promising outlook has developed from a market standpoint during the past week in most of these. Practically

The Cheapest Insurance In the World—
The Cheapest Oil Tool For Its Price Ever Invented

MAN need never submit himself to the complete mercy of a risk. Instinct has devised a protection for him almost as quickly as the danger becomes apparent. Then, if he does not avail himself of it, he is careless and may expect the worst. What is the value of each one of your oil wells?

What is the greatest danger to the life of those wells?

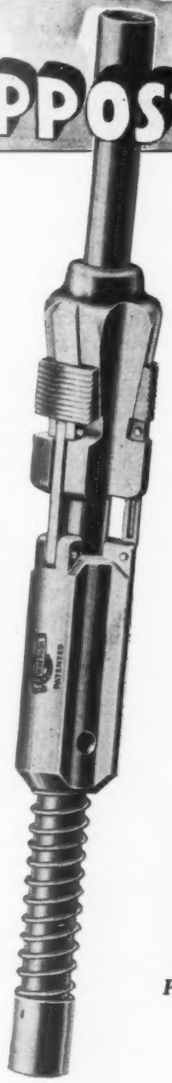
What wears out and line-cuts the casing?

What stops the production oftener than anything else?

What?—FISHING FOR BROKEN AND DAMAGED TUBING.

What does it cost to insure your life against accident?

For every $30,000 worth of accident insurance you carry, it costs you at least $100 per year. That much for the first year and that much for each and every year that you carry it. How much does it cost you to insure your well against tubing accidents? Just the price of a tubing catcher—and remember this — you buy it only once. It is on the job this year, next year and for the life of the well, with the minimum of expense for repairs or replacements. That's why we say that the Guiberson Tubing Catcher is the cheapest insurance in the world and the cheapest oil tool for its price ever invented.



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GUIBERSON

BETTER BE SAFE THAN SORRY

WEEKLY REFINERY STATISTICS FOR THE UNITED STATES

Following are refinery runs of crude, gasoline and gas and fuel oil stocks, by major refining districts for the week ending July 13, 1929:

(Barrels of 42 Gallons)

District—	Percent Potential Capacity Reporting	Crude Runs to Stills	Percent Operated of Total Capacity Reporting	Gasoline Stocks	Gas and Fuel Oil Stocks
East Coast	100.0	3,037,600	76.8	5,716,000	10,613,000
Appalachian	85.5	591,200	84.8	1,147,000	1,072,000
Indiana, Illinois, Kentucky	97.7	2,050,600	91.2	6,547,000	3,341,000
Oklahoma, Kansas, Mo...	71.4	1,744,300	82.3	3,757,000	4,065,000
Texas	87.8	3,778,400	90.6	4,942,000	12,136,000
Louisiana-Arkansas	90.6	1,288,700	80.0	2,177,000	5,592,000
Rocky Mountain	92.2	464,100	54.7	1,847,000	508,000
California	95.6	5,620,100	100.0	11,581,000	102,952,000
Total week July 13th	91.0	18,575,000	87.3	37,714,000	140,279,000
Daily Average		2,653,600			
Total week July 6th	89.9	18,127,600	86.3	39,140,000	139,950,000
Daily Average		2,589,700			
Texas (Gulf Coast)	98.2	2,973,700	96.3	4,118,000	9,314,000
Louisiana (Gulf Coast)	97.5	901,400	83.1	1,917,000	4,566,000

without exception the new fields appear to be spotted and erratic. Water intrusion also promises to materially lower production recovery. The Oklahoma City field takes first rate, despite water intrusion. The producers in that field seem to be able to continue to obtain considerable oil regardless of the amount of water they make. When additional producers have been completed the water may, however, have telling effect on production. Fifty thousand barrels daily is still looked upon as the peak of Oklahoma City with it now producing 20,000 barrels per day. Production there could go much higher were the producing sands not so deep and required such a long period of drilling.

The new Sasakwa field may not prove as important as it first looked. Water is already making inroads on production to the south and southwest. The other directions remain open for development and much depends on the findings there. At St. Louis the new Link area is having trouble with water and the new completions are not showing up like the earlier ones.

While the crude market is softening there is a distressing condition in the gasoline market, due primarily to the running of too much oil to stills a short time ago. Refiners realizing that they were making too much gasoline have ceased the heated competition for additional crude connections, and are reducing their runs to stills.

In an effort to develop a greater spot trade, many Mid-Continent refiners have dropped their spot gasoline quotations to 8 cents, compared with 9¼ cents a month ago. Spot business continues slow, but contract shipments are fairly brisk.

Texas Gains

While the output of Texas only increased 4900 barrels, the total outside of the Gulf Coast showed a gain of 8600 barrels. Practically all of this gain can be credited to West Central and West Texas, being directly attributed to increased production in Coleman, Young and Pecos Counties. Coleman County production increased from 4350 barrels to 6300 barrels, a gain of 1950 barrels. Young County showed a gain of 2550 barrels, reaching a total of 11,500 barrels a day. The total production of West Central Texas increased last week from 54,500 to 59,400 barrels. In West Texas, the Yates area, in Pecos County, registered a gain of 4500 barrels, while Winkler County production was slightly lower than in the preceding week. The total output of the West Texas area increased last week from 392,300 barrels to 396,200 barrels. Declines in Pierce Junction and Spindle Top of 2050 and 1900 barrels, respectively, brought about a decline in this area of 3700 barrels. On the whole, conditions in West Texas continue good, with the prospect that current demand will absorb increased output throughout the balance of the summer.

It is noted that production east of the Rocky Mountains gained 5500 barrels, indicating that both California and the Rocky Mountain area aided the crude situation with decreased production. A decline of 1550 barrels in the Salt Creek, Wyoming, field contributed to the net decline recorded for the Rocky Mountain area. Eastern fields, on the other hand, registered a gain of 1100 barrels. A summation of increases and decreases in crude production last week shows gains aggregating 13,850 barrels and declines aggregating 11,650 barrels.

The gasoline price structure in the North and West Texas refining centers developed further weakness within the past week, with many plant owners showing a willingness for jobbers to name their own prices on U. S. Motor gasoline in order to get relief from burdensome stocks. Refiners not protected with a direct service and bulk station outlet are taking an unusually severe drubbing this summer on prices, while their below-cost quotations on gasoline have not brought forth the desired results in moving surplus gasoline stocks.

With gasoline consumption now nearing the peak season with the U. S. Motor quoted at seven cents per gallon F.O.B. cars, this latter quotation is about two cents per gallon below the peak price level reached about May 20, when the general price advance in crudes took place.

Surplus gasoline production held by major refining interests above their own established market outlet is a big factor in the Texas interior plants failing to develop a normal market this summer, while the flood of California gasoline dumped into the heavy consuming areas east of the Mississippi has also been greatly felt. Further curtailment of crude runs is in store for the interior plants of Texas, as a heavy loss is being sustained on every barrel of crude run through stills, with no immediate relief in sight.

A general breakdown of crude prices towards the close of the summer is being talked freely among independent plant owners.

Bulcher Field Well Breaks Cooke County Record

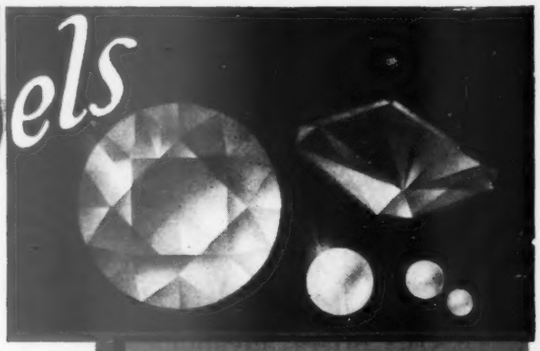
Wichita Falls.—Previous records for initial production in the Bulcher field, northwestern Cooke County, were shattered early this week when the Kewanee Oil & Gas Company's Hyman-Timms 6 "B" flowed 3000 barrels of 39 to 40 gravity clean oil from broken sandy-lime formation at a total depth of 1466 feet.

Humble Pipe Line Company has connected the well, which is located near the center of the west line of the E. T. Railroad Survey. Abstract 363, and an east offset to the 400-barrel well recently completed by Humble Oil & Refining Company on the Poteet farm.

The big producer is on the east edge of the West Bulcher field, and both areas are now certain to be connected up, with the Kewanee Oil & Gas Company in possession of all acreage in between.

The unusual producer drilled through oil sand at 1156 to 1176 feet, followed by saturated sandy-lime horizons, with the best production coming from lime at 1415 to 1436 feet. The well was carried 30 feet below this horizon before being bailed in.

Tiffany for Jewels



IT was an old and highly valued friend speaking—"We like to think of Cooper engines as we think of Tiffany diamonds—none better—thorough reliability—all that and more—the result, undoubtedly, of reputations built long ago and gaining greater and greater prestige as the years roll by. Personally, I think of you fellows out there in a small Ohio town devoting all your interest, your time, money, lives—just to engine-building. Your organization seems consecrated to its craft."

Cooper 4-cycle horizontal gas engine and compressors are built in standard sizes from 50 to 1500 B. H. P. They embody successful engine-building experience of nearly a century.

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Formerly The C & G. Cooper Co. and The Bessemer Gas Engine Co.

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615 Kennedy Bldg., Tulsa, Okla

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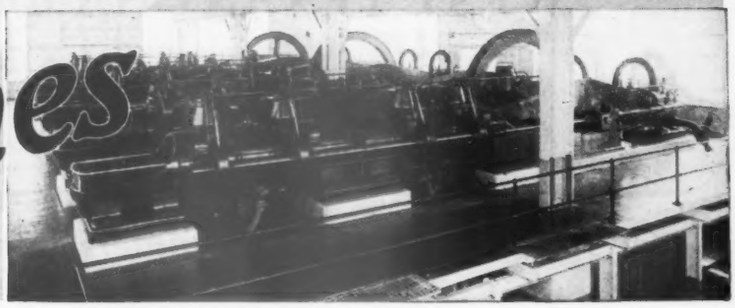

WEST TEXAS - The Land of Opportunity

An area rich in natural resources, WEST TEXAS offers advantages unsurpassed anywhere in the United States. Peopled by an intelligent citizenship that is ready to give encouragement to the further economical development of the territory.

Industrial and commercial expansion is keeping pace with the spread of the Oil Industry in WEST TEXAS. Today the opportunities of the section were never more promising for the establishment of new enterprises and the extension of trade territories.

Climatic conditions are favorable, abundant man-power is available and what is even more important a friendly spirit of co-operation pervades throughout the whole of WEST TEXAS.

Communications are Invited from Those Interested

Please Address

WEST TEXAS CHAMBER OF COMMERCE
STAMFORD, TEXAS

Or Any Chamber of Commerce or Board of City Development in West Texas

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1928	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
January	675,450	108,300	523,330	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,600	97,200	603,700	135,050	37,300	81,350	113,450	74,600	697,850	2,551,100	79,084,400
1929											
January	722,550	97,150	632,500	136,750	36,650	78,600	111,950	73,200	747,250	2,635,600	81,703,600
February	714,800	95,950	643,350	142,300	35,700	74,600	108,550	71,750	797,800	2,684,800	75,204,400
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April	665,600	106,400	650,100	154,550	35,550	72,900	110,850	69,400	781,350	2,646,700	79,402,100
May	679,650	115,400	651,100	150,350	35,350	71,500	114,150	72,850	749,250	2,639,600	81,827,600
June	685,200	120,750	688,200	147,500	35,700	70,050	116,750	72,000	827,200	2,763,400	82,902,250
July 6	717,800	122,400	696,100	147,250	35,050	69,250	119,100	71,850	878,600	2,857,400	20,001,800
July 13	720,900	121,300	715,200	151,150	35,700	69,150	120,900	74,850	882,600	2,891,750	20,242,250
July 20	717,700	125,000	723,800	146,500	36.150	68,650	122,000	73,850	880,300	2,893,950	2,257,650
Increase	.....	3,700	8,600	.....	450	.....	1,100	.....	.....	2,200	15,400
Decrease	3,200	.....	.....	4,650	.....	500	.....	1,000	2,300	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	July 20	July 13
Carson County	7,100	7,200
Gray County	56,050	55,750
Hutchinson County	24,500	25,150
Wheeler County	600	600
Others	1,000	1,100
Total	89,250	89,800

NORTH TEXAS

Archer County	19,000	18,350
Burkburnett	8,700	8,800
Electra	11,800	12,000
Iowa Park-KMA	4,700	4,800
Montague and Cooke Cos.	13,100	12,600
Wilbarger	27,000	26,100
Others	800	700
Total	85,100	83,350

WEST CENTRAL TEXAS

Brown County	7,500	7,800
Callahan County	4,200	4,300
Coleman County	6,300	4,350
Eastland-Desdemona	7,000	6,800
Jack County	3,300	3,000
Palo Pinto County	400	300
Shackelford County	11,200	11,600
Stephens County	6,600	6,100
Throckmorton County	800	700
Young County	11,500	8,950
Others	600	600
Total	59,400	54,500

WEST TEXAS

Crane-Upton Counties	45,200	45,400
Crockett County	2,100	1,900
Howard County	43,200	42,900
Jones County	3,400	3,100
Mitchell-Scurry Cos.	2,700	2,700
Pecos County	139,900	135,400
Reagan County	18,100	17,900
Winkler County	140,200	141,500
Others	1,400	1,500
Total	396,200	392,300

EAST CENTRAL TEXAS

Boggy Creek	2,800	2,600
Corsicana-Powell	7,200	7,550
Currie	400	350
Mexia	5,400	5,450
Nigger Creek	400	400
Richland	350	400
Wortham	950	1,000
Total	17,500	17,750

SOUTHWEST TEXAS

Dale	400	400
Laredo District	11,000	10.950
Luling	11,300	11,400
Lytton Springs	1,000	900
Somerset	1,450	1,600
Salt Flat	47,250	48,500
Others	3,950	3,750
Total	76,350	77,500
T'tl Tex. (Outside Gulf Coast)	723,800	715,200

TEXAS GULF COAST

Barbers Hill	7,500	8,500
Batson	1,250	1,250
Big Creek	4,200	4,500
Blue Ridge	4,000	3,400
Boling	1,400	1,500
Damon Mound	600	600
Goose Creek	5,500	5,600
Hull	7,900	7,800
Humble	6,600	6,300
Orange County	2,850	2,800
Pierce Junction	17,150	19,200
Raccoon Bend	6,700	6,600
Saratoga	900	900
Sour Lake	2,500	2,800
South Liberty	6,100	6,100
Spindle Top	27,400	29,300
Sugar Land	13,300	12,700
West Columbia	5,850	6,100
Washington Co.	2,700	2,700
Others	3,750	3,200
Total	128,150	131,850
Texas Total	851,950	847,050

OKLAHOMA

Asher	12,650	9,750
Carr City	13,900	13,800
Braman	3,850	3,800
Logan Co.	21,050	21,000
Blackwell	3,750	3,850
Hubbard	1,800	1,800
Thomas	850	900
Tonkawa	9,550	9,850
Garber	5,650	5,750
Burbank	19,600	19,700
Osage (outside Burbank)	26,100	26,500
Cushing	18,600	18,550
Yale Jennings	7,000	6,950
Davenport	1,400	1,450
Bristow Slick	20,650	19,700
North Okmulgee	12,800	12,800
Lyons Deaner	8,350	8,350
Cromwell	8,050	8,100
Papoose	3,300	3,300
Wewoka	4,700	4,750
Seminole	33,750	34,400
East Seminole	5,550	5,250
Bowlegs	34,550	33,600
Searight	11,350	11,850
Little River	76,850	80,200
Earlsboro	81,800	82,650
Duncan District	7,500	7,250
Graham	4,300	4,200
Fox	1,400	1,400
Healdton	13,000	12,850
Hewitt	7,950	8,100
Scholem Alechem	12,700	12,700
Pearson	1,200	1,250
St. Louis	72,300	75,150
Allen	25,150	24,950
Maud	11,600	11,900
Mission	32,200	33,850
Oklahoma City	21,450	19,700
Others	59,500	59,000
Total	717,700	720,900

CALIFORNIA

Santa Fe Springs	282,000	280,000
Long Beach	172,000	173,000
Huntington Beach	44,000	45,000
Torrance	13,000	13,000
Dominguez	10,500	9,800
Rosecrans	6,000	6,000
Inglewood	23,000	23,000
Midway-Sunset	66,000	66,000
Ventura Avenue	58,500	59,000
Seal Beach	47,500	49,000
Elwood-Goleta	27,600	28,300
Kettleman Hills	3,400	3,400
Others	126,800	127,100
Total	880,300	882,600

KANSAS

Greenwood County	21,100	21,150
Florence-Covert	950	950
Peabody-Ebling	2,800	2,800
Eldorado-Towanda	12,900	12,900
Augusta-Fox Bush	3,100	3,100
Rainbow Bend	1,050	1,050
Russell	3,200	3,200
Churchill	6,100	5,900
Oxford	4,500	4,500
Sedgewick	36,500	33,250
Others	32,800	32,500
Total	125,000	121,300

NORTH LOUISIANA

	July 20	July 13
Homer	3,900	3,900
Haynesville	4,950	5,000
Caddo Light	9,450	9,500
Caddo Heavy	3,400	3,250
DeSoto-Red River	3,700	3,450
Elm Grove	550	600
Bellevue	600	600
Cotton Valley	2,550	2,500
Urania	6,300	6,100
Pleasant Hill	500	550
Others	250	250
Totals North Louisiana	36,150	35,700

LOUISIANA GULF COAST

Bayou Boullion	150	200
East Hackberry	2,800	3,150
Hackberry	2,100	2,350
Edgerly	700	700
Evangeline	2,250	2,500
Lockport	3,600	3,600
Sorrento	200	200
Sulphur Dome	1,600	1,700
Sweet Lake	50	100
Vinton	4,300	4,200
Others	600	600
Total Louisiana Gulf Coast	18,350	19,300
Louisiana Total	54,500	55,000

ARKANSAS

El Dorado	4,650	4,500
Champagnolle	7,500	7,400
Smackover Light	6,200	6,200
Smackover Heavy	46,950	47,650
Stephens	1,000	1,000
Nevada	1,000	1,050
Lisbon	1,250	1,200
Others	100	100
Total	68,650	69,150

MOUNTAIN STATES

WYOMING

Salt Creek	29,500	31,050
Grass Creek	2,200	2,100
Elk Basin	750	650
Big Muddy	2,300	2,300
Lost Soldier	4.100	3,900
Rock River	2,350	2,400
Lance Creek	200	200
Oregon Basin	5,600	5,600
La Barge	2,500	1,750
Others	3,600	3,750
Total	53,100	53,700

MONTANA

Cat Creek	1,450	1,450
Sunburst	6,850	6,850
Pondera	3,200	3,200
Others	100	100
Total	11,600	11,600

COLORADO

Moffats (Craig)	1,500	1,450
Fort Collins	2,200	2,150
Florence	900	850
Others	2,300	2,350
Total	6,900	6,800

NEW MEXICO

Table Mesa	...	...
Artesia	900	800
Hogback	100	100
Rattlesnake	800	1,400
Others	450	450
Total	2,250	2,750
Totals Mountain States	73,850	74,850

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	122,000	120,900

PRODUCTION SUMMARY

East of Rockies	1,939,800	1,934,300
Total U. S.	2,893,950	2,891,750

CRUDE OIL PRICE QUOTATIONS

Revised July 20, 1929

CRUDE OIL PRICE CHANGES

Effective July 16, Joseph Seep purchasing agency reduced leading grades of Pennsylvania crude from 25 to 35 cents a barrel. New prices in effect are Pennsylvania grade, Bradford District, in National Transit Company lines $3.75 on oil run prior to July 1 and $3.80 on oil run on and after July 1; Pennsylvania grade in Southwest Pennsylvania lines $3.75; Pennsylvania grade in Eureka lines, $3.65; Pennsylvania grade in Buckeye lines $3.50. All other grades remain unchanged.

EASTERN STATES
(Effective July 16, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.80
Bradford District Oil in National Transit Lines (Pennsylvania)	3.80
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.75
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.75
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.65
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.50
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.35
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.50
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	60
Keister (Pennsylvania)	1.20

CENTRAL STATES
(Effective May 21, 1929)
Posted by Ohio Oil Co.

Illinois	1.75
Indiana	1.57
Lima	1.80
Plymouth	1.28
Princeton	1.75
Waterloo	1.25
Wooster	1.90

MID-CONTINENT
(Effective May 21, 1929)
Magnolia Petroleum Company

Under 26	.70
26 to 26.9 gravity	.75
27 to 27.9 gravity	.85
28 to 28.9 gravity	.90
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.05
31 to 31.9 gravity	1.15
32 to 32.9 gravity	1.25

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

MID-CONTINENT
(Effective May 20, 1929)
Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company

25 to 25.9 gravity	.90
26 to 26.9 gravity	.95
27 to 27.9 gravity	1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 and above	1.85

WESTERN KENTUCKY

All grades	1.83

PANHANDLE
(Effective May 20, 1929)
GRAY COUNTY
(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company)

Below 29 gravity	.90
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.00
31 to 31.9 gravity	1.05
32 to 32.9 gravity	1.10
33 to 33.9 gravity	1.15
34 to 34.9 gravity	1.20
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.30
37 to 37.9 gravity	1.35
38 to 38.9 gravity	1.40
39 to 39.9 gravity	1 45
40 to 40.9 gravity	1.50
41 to 41.9 gravity	1.55
42 to 42.9 gravity	1.60
43 to 43.9 gravity	1.65
44 and above	1.70

WHEELER COUNTY
(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.90
30 to 30.9 gravity	.95
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.05
33 to 33.9 gravity	1.10
34 to 34.9 gravity	1.15
35 to 35.9 gravity	1.20
36 to 36.9 gravity	1.25
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.35
39 to 39.9 gravity	1.40
40 to 40.9 gravity	1.45
41 to 41.9 gravity	1.50
42 to 42.9 gravity	1.55
43 to 43.9 gravity	1.60
44 and above	1.65

CARSON-HUTCHINSON COUNTIES
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.90
32 to 32.9 gravity	.95
33 to 33.9 gravity	1.00
34 to 34.9 gravity	1.05
35 to 35.9 gravity	1.10
36 to 36.9 gravity	1.15
37 to 37.9 gravity	1.20
38 to 38.9 gravity	1.25
39 to 39.9 gravity	1.30
40 to 40.9 gravity	1.35
41 to 41.9 gravity	1.40
42 to 42.9 gravity	1.45
43 to 43.9 gravity	1.50
44 and above	1.55

SOMERSET
Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

CALIFORNIA CRUDE OIL PRICES AT THE WELL
(EFFECTIVE JANUARY 13, 1929)

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Ventura*	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood† Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elks Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14-9	$ .85	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15-9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16-9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17-9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18-9	.85	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19-9	.85	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20-9	.85	.85	.85	.85	.85	85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21-9	.86	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22-9	87	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	80
23-23-9	.90	.97	.97	.97	.97	97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24-9	.94	1.01	1.01	1.01	1.01	1.01	1.01	..	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25-9	.98	1.05	1.05	1.05	1.05	1.05	1.05	..	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26-9	1.02	1.09	1.09	1.09	1.09	1.09	1.09	..	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27-9	1.06	1.13	1.13	1.13	1.13	1.13	1.13	..	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28-9	1.10	1.17	1.17	1.17	1.17	1.17	1.17	..	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29-9	1.14	1.21	1.21	1.21	..	1.21	1.21	..	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30-9	1.18	1.25	1.25	1.25	..	1.25	1.25	..	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31-9	1.23	1.30	1.30	1.30	..	..	1.30	..	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32-0	1.28	1.35	1.35	1.35	..	..	1.35	..	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
32-32-9	..	..	..	..	..	..	1.41	..	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34-9	..	..	..	..	..	..	1.47	1.16	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35-9	..	..	..	..	..	..	1.53	1.22	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36-9	..	..	..	..	..	..	1.59	1.28	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37-9	..	..	..	..	..	..	1.65	1.34	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38-9	..	..	..	..	..	..	1.71	1.40	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39-9	..	..	..	..	..	..	1.77	1.46	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40-9	..	..	..	..	..	..	1.83	1.52	..	..	..	..	..	..	..	..	..	..	..	..
41-41-9	..	..	..	..	..	..	1.89	1.58	..	..	..	..	..	..	..	..	..	..	..	..
42-42-9	..	..	..	..	..	..	1.95	1.64	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degrees Gravity and above $1.65 per barrel. *Union Oil Company. †Changed March 18, 1929.

(See Page 140)

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PETRECO

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 138*)

WEST TEXAS
(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Howard, Pecos and Winkler Counties and Lea County, N. Mex.

Below 25 gravity	.70
25 to 25.9 gravity	.74
26 to 26.9 gravity	.78
27 to 27.9 gravity	.82
28 to 28.9 gravity	.86
29 to 29.9 gravity	.90
30 to 30.9 gravity	.94
31 to 31.9 gravity	.98
32 to 32.9 gravity	1.02
33 to 33.9 gravity	1.06
34 to 34.9 gravity	1.10
35 to 35.9 gravity	1.14
36 and above	1.18

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

MARKHAM
The Texas Company
(Effective May 20, 1929)

All grades	$1.00

LULING

All grades	.90

NORTH AND CENTRAL TEXAS
(Effective May 21, 1929)
Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude
(Humble Oil and Refining Company)

Below 25	.85
25 to 25.9 gravity	.90
26 to 26.9 gravity	.95
27 to 27.9 gravity	1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 and above	1.85

SOUTH TEXAS

Mirando	.90
Salt Flat	1.25

GULF COAST
(Effective May 21, 1929)

Grade "A" all companies	1.30
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.18
26 to 26.9 gravity	1.21
27 to 27.9 gravity	1.24
28 to 28.9 gravity	1.27
29 to 29.9 gravity	1.30
30 to 30.9 gravity	1.33
31 to 31.9 gravity	1.36
32 to 32.9 gravity	1.39
33 to 33.9 gravity	1.42
34 to 34.9 gravity	1.45
35 to 35.9 gravity	1.48
36 to 36.9 gravity	1.51
37 to 37.9 gravity	1.54
38 to 38.9 gravity	1.57
39 to 39.9 gravity	1.60
40 and above	1.63

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

WYOMING-MONTANA
(Effective May 21, 1929)
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.65
Grass Creek	1.65
Rock Creek	1.40
Lost Soldier	1.05
Lance Creek	1.68
Mule Creek	1.20
Notches	.65
Big Muddy	1.43
Osage	1.38
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.48
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA
(Effective May 24)

Sunburst	$1.75
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.43

CANADA
(Effective May 21, 1929)

Oil Springs	2.27
Petrolia	2.20

LOUISIANA-ARKANSAS
(Effective May 22, 1929)
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company.)

27 to 27.9 gravity	$1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 gravity and above	1.85

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS
(All Companies)

Below 28 gravity	.90
28 to 28.9 gravity	.94
29 to 29.9 gravity	.98
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.06
32 gravity and above	1.10

SMACKOVER
(All Companies)

Below 24 gravity	.85
24 and above	1.00
Bellevue	1.30
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	1.00
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS
(Barrels of 42 Gallons)

	Week Ended July 13	Week Ended July 6
AT ATLANTIC COAST PORTS		
Baltimore	436,000	164,000
Boston	158,000	.....
New York	740,000	955,000
Philadelphia	314,000	403,000
Others	294,000	*178,000
Total	1,942,000	1,700,000
Daily Average	277,429	242,857
AT GULF COAST PORTS		
Galveston District	66,000	82,000
New Orleans and Baton Rouge	98,000	100,000
Port Arthur and Sabine District	.....	230,000
Tampa	1,000	.....
Total	165,000	412,000
Daily Average	23,571	58,857
AT ALL UNITED STATES PORTS		
Total	2,107,000	2,112,000
Daily Average	301,000	301,714
Daily Average Four Weeks Ended	280,821	292,500

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS
(Barrels of 42 Gallons)

	Week Ended July 13	Week Ended July 6
AT ATLANTIC COAST PORTS		
Baltimore	207,000	114,000
Boston	.....	70,000
New York	95,000	273,000
Philadelphia	244,000	198,000
Others	76,000	*55,000
Total	622,000	710,000
Daily Average	88,857	101,429
AT GULF COAST PORTS		
Total	.....	.....
Daily Average	.....	.....
AT ATLANTIC AND GULF COAST PORTS		
Total	622,000	710,000
Daily Average	88,857	101,429
Daily Average Four Weeks Ended	82,429	76,929
Distribution of Total California Oil Receipts is as follows:		
Crude	95,000	70,000
Gasoline	382,000	640,000
Kerosene Distillate	76,000	.....
Lubricants	69,000	.....
Total	622,000	710,000

*Revised.

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PERSONAL MENTION-MEN YOU KNOW

Sheldon Hardin, president, and W. R. Wheeler, acting vice-president of the Southern Crude Oil Purchasing Company, which maintains headquarters at Fort Worth, inspected the producing properties of the company in the Hendrick field, West Texas district during the past week. This company and its associates have a daily production allowance of 46,773 barrels in the Hendrick field during the current proration period.

B. C. Clardy, former proration umpire of Yates field, has been transferred by Shell Petroleum Corporation to Dallas, to take charge of the Crude Oil Department of Shell Petroleum Corporation in that division.

Ben R. Davis, chief clerk in the Fort Worth district office of The Texas Pipe Line Company, has been transferred to Odessa, Texas, to fill the same position in the West Texas division, which has just been established. Davis has been with The Texas Pipe Line Company for about 20 years, and is to be relieved by E. E. Weller, who has been stationed at San Marcos while construction work was in progress on the company's West Texas trunk line system.

Fred and B. J. Davies of Denver, members of the geological staff of California Company, landed in Casper airport last week in the company's Ford monoplane and have been making air surveys for a week of central Wyoming geological structures with particular attention to those adjacent to Teapot Dome and Salt Creek.

Bert Myers, resident manager for the Tropical Oil Company, a subsidiary of Imperial Oil Company, Ltd., of Canada, which in turn is subsidiary to the Standard Oil Company of New Jersey, visited old friends in Casper for a short time last week. Myers has been absent from Wyoming for four years, all of which time has been spent in Venezuela and Colombia for his company. He was at one time production superintendent for the Carter Oil Company and had headquarters in the Salt Creek field.

Bradford M. Melvin, prominent San Francisco attorney, has been elected vice president, secretary and general counsel of the Richfield Oil Company of California, according to an announcement by James A. Talbot, chairman of the board.

Melvin has been senior member of the law firm of Melvin and Sullivan of San Francisco. He was admitted to the bar upon his resignation from the United States navy at the close of the World War.

Melvin was born in Oakland in 1894, and is the son of the late Judge Henry A. Melvin, who was associate justice of the supreme court of California. He was educated in the Oakland public schools, Boone's University School, Berkeley, and attended Stanford University, the University of Southern California Law School and the University of California. He is a member of the Family, Bohemian and Olympic Clubs and the Lakeside Country Club, all of San Francisco.

BRADFORD M. MELVIN

Vice President, Secretary and General Attorney Richfield Oil Company of California

F. R. Frye, chief clerk to Del Howard, general superintendent in Oklahoma for the oil production division of the Empire Companies, has resigned to accept the appointment as chief of the Michigan conservation department with headquarters at Lansing.

E. J. Munger, owner and active head of The Munger Oil Information Service, which covers all California fields, is spending his annual vacation in Wyoming, Montana and the Canadian Rockies. He is accompanied by Mrs. Munger and children.

Mrs. E. S. King, mother of L. J. King, vice president of the Associated Oil Company, died at her home in Los Angeles, July 16. Mrs. King was 68 years old.

S. P. Tschappat, general manager of the Hercules Tool Company, Tulsa, is on an extended trip through the northern and eastern oil fields. He expects to return to Tulsa about August 15.

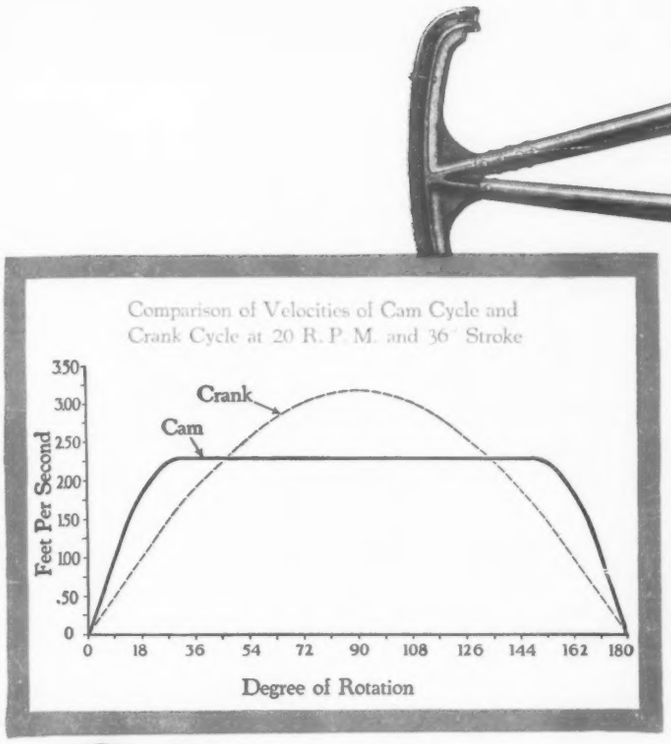
Statistics Will Be Expedited

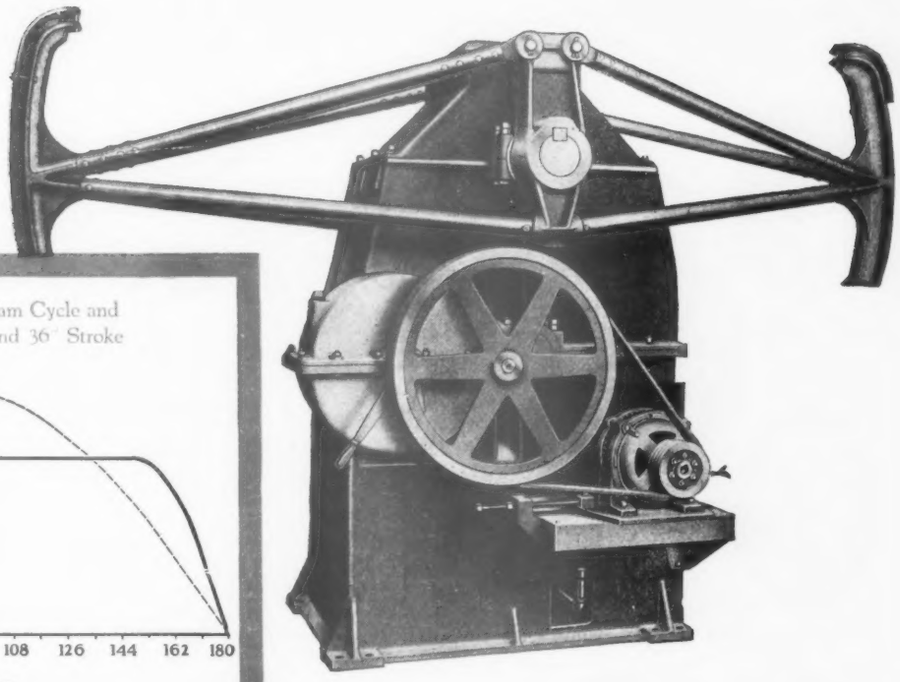
Washington, D. C.—National statistics on the production, stocks and shipments of gasoline and stocks of all petroleum products will be available monthly to the petroleum industry at the San Francisco, Bartlesville and Dallas offices of the United States Bureau of Mines, simultaneously with the release of the monthly petroleum statement at Washington, according to an announcement by the Department of Commerce.

Transmission of these selected items by telegraph will place this information in the hands of Mid-Continent and California oil companies from two to five days sooner than was possible under the former procedure. Oil companies interested in obtaining information on these items should communicate with the nearest of the offices listed.

George H. Baird, operating engineer for the Natural Gas division of the Cities Service Gas Company, has been chosen to succeed Burt Bay as superintendent of operations.

XUM





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Oklahoma--Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

Big Development Program to Follow Southern Oklahoma Discovery

TULSA—A big revival of oil development in southern Oklahoma is anticipated as a result of finding production in the Wirt Franklin Oil Corporation's Spain 1, SW SE NW Section 9-2s-6w, 13 miles southeast of Duncan in Stephens County and three miles northwest of production. The new producer is looked upon as the most important strike since the opening of the Scholem Alechem pool on the Carter-Stephens line a few years ago. Activity in southern Oklahoma has been waning during the past year, but Oklahoma operators are displaying much interest in the new pool, which is being called the Palacine field.

Sand was found at 3225-34 feet and the well started off at 30 barrels per hour. It gauged as high as 750 barrels of oil, after making 492 barrels the first 16 hours. The gravity of the oil is 38 degrees at a temperature of 70 degrees. A drop in production three days after and a small show of water, has caused some to doubt its long life, but then it may be on the edge of the pool. The output of the well had dropped to 400 barrels daily the first of this week. If the water does not increase it may be depened after a pipe line has been laid to the well.

Crude from the well is being sent to the Rock Island refinery, south of Duncan, but Prairie Pipe Line Company is laying a 2-inch 12 mile line to the well.

The new pay is the deepest in the immediate neighborhood, and the test has been attracting attention for a couple of weeks. It practically offsets two abandoned tests of Lone Star Gas Company of Dallas that were drilled several years ago. One of these in the NE NW Section 9-2s-6w, was a wild gas well estimated as capable of 75 million cubic feet at 2968 feet. Water broke in and the well was abandoned. At about the same depth the second test of the Lone Star Company produced close to 25 million cubic feet of gas and a spray of oil.

A half dozen locations have already been made in the immediate vicinity. The new producer is located on a block of 3000 acres. Companies within the block have not announced many locations, but a large number are expected to be announced at once.

Another important wildcat completion in the same general district is the George Pace Watkins 1, SE NW SE Section 21-2s-7w, which was drilled in a week ago. It has increased its production to 300 barrels daily from sand at 1734 feet. The gravity of this well is 34.5 degrees Baume. Pace skidded the rig to his Bunch 1 location, a west offset, and had succeeded in drilling to 1737 feet, where he was setting casing with a good show of oil. This is believed to be a record time for drilling in the district. The Pace-Watkins producer is 1¼ miles southeast of production.

In addition to these wells there are several very interesting wildcat and semi-wildcat tests in Stephens and Carter Counties that may open additional new pools, since a number of them are looking very promising.

New Wilcox Sand Area at Allen

On west side of Allen field, and slightly north of Canadian river, on the Seminole County side of the pool, Blackwell Oil & Gas Company's Fleet 2, SE SW NW Section 13-5n-7e, has been drilled to the Wilcox sand. The well swabbed 710 barrels in 24 hours, after making 415 barrels the first 12 hours on the swab. St. Germain and Lambert have an interest in this well. The Wilcox sand was found from 5347-60 feet. This is the most important development to come from the west side of the Allen field since the completion of the Slick and Sinclair Wilcox sand wells to the south.

The new Sasakwa field, north of Allen, and which has been creating considerable attention since the discovery of Wilcox sand production, showed a slump in production last week, due to intrusion of water, and the pinching of another well. Production from the seven wells dropped to 9142 barrels the first of this week. Sinclair Oil & Gas Company's Davis lease continued to produce most of the oil, making 7588 barrels. Shell Petroleum Corporation's Hotulke lease made 1488 barrels, while the Signal Oil Company and Pure Oil Company's Bond lease was doing 116 barrels to complete the production from the Wilcox sand.

Prairie Oil & Gas Company's Patton, NW NE Section 18-6-8, southmost producer in the field, was plugged back to 4102 feet in the Wilcox sand to shut off the water. It went dead and so far has not been revived. The well had been producing 1700 barrels of oil while cutting 20 per cent. against 3300 barrels of clean oil previously.

Signal Oil Company and Pure Oil Company's Bond 1, Section 13-6-7, southwest extension well, has been pinched to 100 barrels daily in accordance with an agreement. The past week the well started cutting two per cent. before being pinched. It is only a foot in the producing horizon.

Oklahoma City Production to New Peak

As a result of two new wells penetrating the producing horizon the output of the Oklahoma City field jumped to a new peak of 25,185 barrels from eight wells on July 21. The new producers are making only small amounts of oil at this time but are expected to increase their output when deepened further into the producing horizon, which operation is now being made. The output of the region promises to be even greater very soon as a number of drilling tests are nearing the oil carrying stratum.

Of particular interest was the finding of the second gasoline well. Indian Territory Illuminating Oil Company and Foster Petroleum Company's Watters 1, NE NW NE Section 25-11-3w, made 1215 barrels of gasoline against a back pressure of 1800 pounds. Total depth is 6349 feet. This well also becomes the southwest completion in the field. The only other gasoline well is the southeast most producer. It being Sinclair Oil & Gas Company and Amerada Petroleum Corporation's Kinter 1, NW NW SE Section 30-11-2w, which is making close to 1600 barrels of gasoline daily against 1100 pounds back pressure.

Indian Territory Illuminating Oil Company and Foster Petroleum Company's Button 1, SWc Section 19-11-2w, was deepened the past week. It was last reported drilling at 6462 feet. It picked up an increase in production at 6456 feet and is now making 1175 barrels daily.

Although Stamper 1 of the Sinclair Oil & Gas Company, NE SW NW Section 30-11-2w, has been cutting heavily, the company took a chance and deepened it during the week. Total depth is now 6507 feet. The production increased to 4555 barrels of oil and 1200 barrels of water.

A production report of the field on wells not mentioned above is as follows: Indian Territory Illuminating Oil Company and Foster Petroleum Company's Fee 1, C SE SE Section 24-11-3w, discovery well, 1953 barrels of oil and 936

barrels of water; Mid-Kansas Oil & Gas Company's Fortson 1, C SW NE Section 24-11-3w, drilled to 6587 feet, increased to 3822 barrels, No. 2, Fortson, 4016 barrels, and Coline Oil Company's Olds 1, SE NW Section 24-11-3w, 4636 barrels.

Prairie Oil & Gas Company and T. B. Slick's Hiddleston 1, SW SW SE Section 30-11-2w, on the east side of the field, has been showing oil for several days, with the show getting stronger. Total depth is now 6285 feet.

The Prairie Oil & Gas Company, T. B. Slick, Phillips Petroleum Company's Sudick 1, wildcat south of Oklahoma City, in Section 8-10-2w, and across the county line into Cleveland County, is rigging up standard tools. Total depth of the hole is now 6975 feet in limestone, where it had a slight showing of oil.

St. Louis Development

Several wells were drilled into producing formation in the "Link District" of St. Louis field during the past week, but nothing of an exciting nature developed. Some of the developments there were as follows: Darby Petroleum Company's Nixon 2, SE SW SW Section 9-7-4, top of the Hunton lime 3585 feet, drilling 3645 feet in the Hunton with a hole full of oil; the same company's Youngblood 3, NWc SE NW Section 16-7-4, Hunton lime 3643-45 feet, no show yet; same company's Youngblood 4, NWc NE NW Section 16-7-4, Hunton lime 3610-30 feet, nothing showing; Independent Oil & Gas Company and Westland Oil Company's Rhodd 2, SW NW NW Section 16-7-4, Simpson sand 4020-60 feet, 60 barrels per hour; Nos. 3 and 4, on this lease will soon be in; Gypsy Oil Company's Green 2, SW NW SE Section 17-7-4, swabbed 842 barrels from 4150-78 feet; Houston Oil Company's Wyatt 2, NWc NE SE Section 17-7-4, Hunton lime 3845-47 feet, showing; Prairie Oil & Gas Company et al's Cummings 1, NEc Section 17-7-4, drilled seven feet deeper total depth 4078 feet in Simpson sand and swabbed 515 barrels; and Prairie Oil & Gas Company and Shaffer Oil & Refining Company's Reagan 2, NE SE NE Section 17-7-4, Simpson sand 4095-4128 feet, flowed 1045 barrels.

Darby Oil Company and Independent Oil & Gas Company's Pappan 1, NE SE SE Section 16-7-4, dropped its production from 1819 barrels to 830 barrels during the past week. Independent Oil & Gas Company and Westland Oil Company's Rhodd 1, NWc Section 16-7-4, one of the discovery wells, fell to 1255 barrels daily and is cutting 5½ perc ent.

In the north extension area, Sinclair Oil & Gas Company, McGraw Oil Company et al's Kelly "A" 1, NE NW NE Section 2-7-4, west of production, encountered the Wilcox sand from 4328-33 feet, with no increase. It swabbed 225 barrels of oil from the Simpson sand. Irwin & Martin, Sinclair Oil & Gas Company, McGraw Oil Company, Shaffer Oil & Refining Company's Kelly 1, SE NE NE Section 2-7-4, discovery well, was shot with 40 quarts from 4118-45 feet in the Simpson sand. It has a hole full of oil and is cleaning out. This well had the Wilcox sand from 4215-16 feet, but no oil.

Valley Center Gets Another Extension Westward

WICHITA — Greenwich townsite pool of Sedgwick County continues to develop some oil wells. The best completion during the week was Derby Oil Company's Haladik 1, lot 3, block 10, SW SE SW Section 15-26-2e. This well is estimated good for 2000 barrels of oil and is making no water from the chat producing horizon at 2918-20 feet. This is the fifth producer on the townsite and is probably the largest well yet found.

Mars Oil Company's Miller 1, SE SW Section 2-26-2e, north of the field, pumped 425 barrels of oil and 127 barrels of water, after running the tubing. This well swabbed 700 barrels of oil the first 20 hours after having been drilled to 2893 feet in the chat. W. F. Kenny et al's Richards 1, block 6, NEC SW SW Section 15-26-2e, on the north edge of the townsite, swabbed and flowed 1400 barrels of oil and 150 barrels of water at 2928 feet. T. M. Deal's Osborne 1, NE SW SW Section 15-26-2e, made 450 barrels of oil and two per cent. water.

Shell Petroleum Company's Hammant 1, NW NE NE Section 22-26-2e, has exhausted the oil show in the chat after swabbing but 30 barrels. The hole will be deepened. This well was drilled to 3085 feet with rotary tools and plugged back to the chat. It will seek the Wilcox sand. It is south of the field.

With the completion of the Derby Oil Company's Haladik 1, production of the five producing wells on the townsite increased to around 4,000 barrels. Several new locations were staked and others are anticipated.

West Extension to Valley Center

Another west extension has been made to the Valley Center or Wright field. Wentz Oil Company's Bright 1, SE NE NW Section 1-26-1w, has 1000 feet of oil in the hole and is cleaning out. There is no water. The oil is coming from the dolomite horizon at 3360-68 feet. It will be deepened. The outcome of this well will mean much to the development of the western part of the field.

Skelly Oil Company, Davis and others Wilson 9, SW NE Section 1-26-1w, also on the west side of the Valley Center field, swabbed 25 barrels per hour from the producing horizon found at 3357½-66 feet. This well is a north offset to the Continental Oil Company, Gypsy Oil Company, Bu-Vi-Bar Petroleum Company's Corr 5, original west extension well of the field.

Goodrich Area

Activity in the Goodrich area, north of Valley Center, is increasing. Prairie Oil & Gas Company's Black 1, Section 21-25-1e, found nothing at 2990 feet in the chat. Producers & Refiners Corporation has staked an east offset to Barnsdall Oil Company's Kuske 1, which came in for 350 barrels. The Producers & Refiners Corporation's location is in the NW SW Section 19-25-2e.

The Texas Company staked a northwest offset to the Barnsdall well, in the SEc SW Section 13-25-1e, and Barnsdall Oil Company made a north offset to the Kuske well. The latter location being in the SEc Section 13-25-1e.

Continental Oil Company's Goodrich 1, discovery well in Section 16-25-1e, produced 35 barrels of oil and 140 barrrels of water. It is being taken off the beam and returned to the submarine pump. No. 2 Goodrich, produced 280 barrels of oil and 175 barrels of water. The same company's Black 1, Section 16-25-1e, produced 135 barrels of oil.

Continental Oil Compnay's Wetsterfield 1, NW SE SW Section 16-25-1e, was dry in the chat. It found some oil in the Wilcox sand upon reaching that horizon, but was carried deeper to the Siliceous lime. It is now plugged back to the Wilcox sand showing at 3335 feet, and it will be swabbed.

McPherson County Well Opened Up

Shell Petroleum Corporation opened up its Ritz 1, NW SE SW Section 1-20-2w, southeast of McPherson, in McPherson County. The well flowed 35 barrels in 7 minutes, and it is estimated that it would have made 200 barrels an hour, if allowed to remain open. The well has been flowing between 1000 and 1100 barrels of oil daily against a 225 pound back pressure, along with some water. The oil is coming from a chat at 2957-2960 feet and tests 36 gravity. The loading rack will soon be completed. A pipeline to the loading rack site has been laid. The oil is now going into storage. This is the largest well yet completed in McPherson County, and is one of the most important strikes of the big central Kansas play.

Reno Wildcat Finds Gas

Skelly Oil Company's Birkett 1, NEc SW Section 30-24-7w, wildcat in Reno County, south of Hutchinson, has found between three million and five million cubic feet of gas at 2075-85 feet. The gas producing formation is a sandy lime. It will be drilled deeper. This is an important wildcat test located on a thoroughly core-drilled structure. It is also on a pooling agreement in which Prairie Oil & Gas Company, Amerada Petroleum Corporation and Gypsy Oil Company have an interest.

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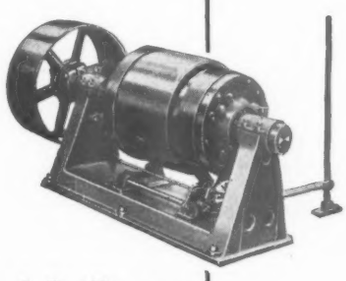

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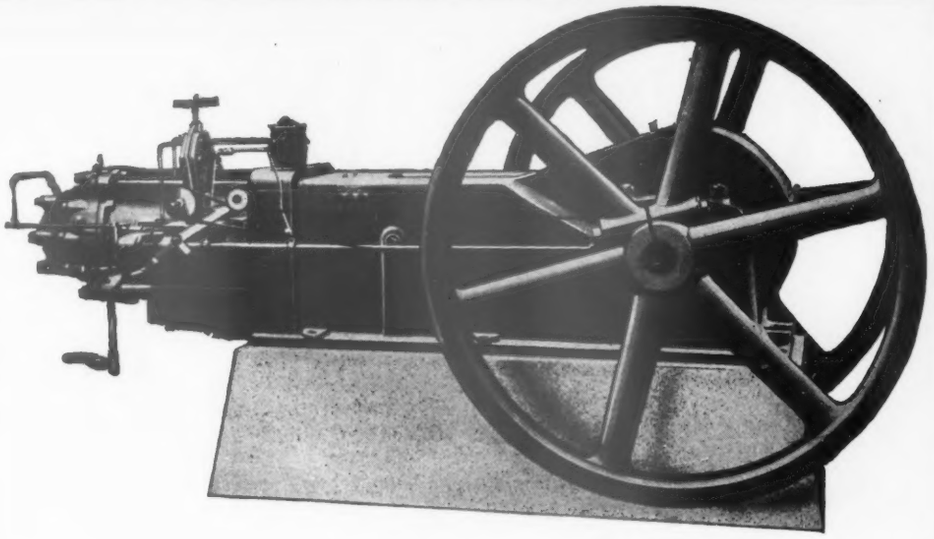

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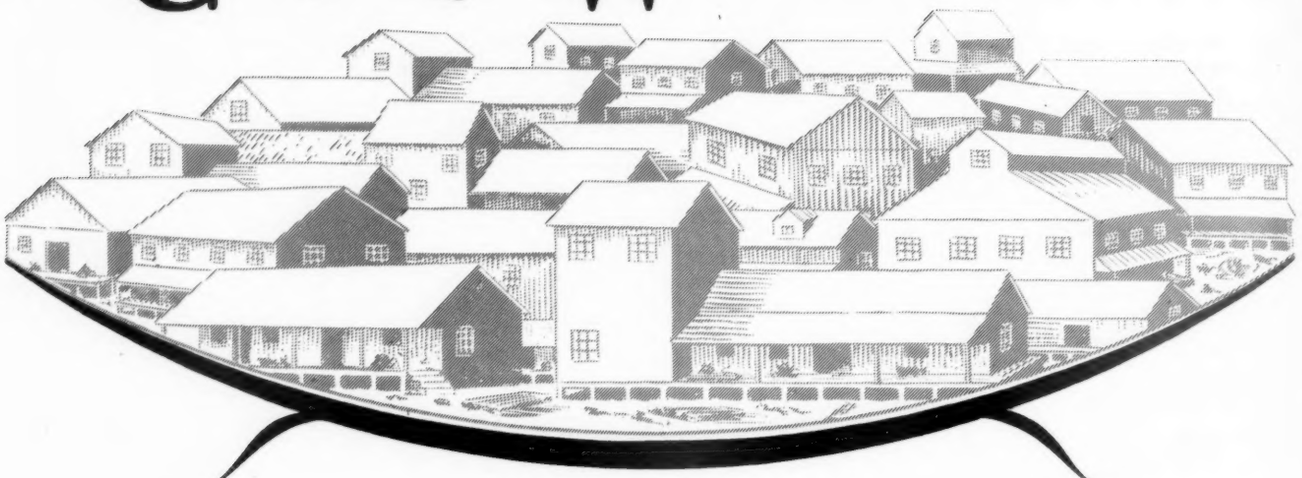

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North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Young County Discovery Gives Boost to Shallow Drilling

WICHITA FALLS.—Shallow wildcat drilling in North Central Young County has been given a boost by the recent discovery of a new pool 10 miles west of Loving and eight miles southwest of the Loving shallow field. This strike was made by W. R. Stafford of Graham and associates on the E. Brown 35-acre lease, near the center of the south line of Section 290, T. E. & L. Survey, Abstract 537, with an initial production of 60 barrels of 34° gravity oil on pump from sand at 554-557 feet. This horizon is similar to that of Loving field, which has been a popular area with small operators for more than a year. The Panhandle Refining Company has started a test near the Stafford pool discovery well, and a few successful completions will lead to an active drilling campaign.

Waggoner Brothers' ranch, centering on the Hezekiah George Survey has lately developed into an important source of new production for Wichita County through the completion of a number of wells from the 1300-foot horizon. During the past week, The Texas Company's J. & J. Waggoner 6 produced 240 barrels initial on a swabbing test from sand at 1280-93 feet, and Waggoner 8 swabbed 360 barrels during a 24-hour test while cleaning out after drilling 25 feet of sand to a total depth of 1295 feet. In the same area. J. G. Rowe et al's Waggoner Brothers 4 has been completed as a 40-barrel pumper at 1325 feet. Golding-Cochran et al's Waggoner Brothers 5 was credited with an initial production of 20 barrels at 1313 feet. However, these interests' Waggoner Brothers 6 was brought in several weeks ago swabbing 350 barrels at 1301 feet.

Wilbarger County continues to hold the lead over all other counties in the North Texas district on new production quotas, with the greater portion of the development and new production coming from the W. T. Waggoner ranch property. This county averages from 10 to 12 completions each week, and has a much smaller percentage of failures than other active counties comprising the district. The largest completion scored during the past week is credited to the Waggoner Refining Company's Waggoner 5-J, which swabbed 350 barrels of clean oil on 12-hour test from sand at 1858-77 feet. In the old Sigler pool, the Simpson Fell Oil Company's Waggoner 1-A has been completed with an initial production of 210 barrels flowing natural through tubing from saturated lime at 2658-65 feet. This is the deepest level at which oil is found in the county in any appreciable quantity.

Efforts of Bass-Dillard et al to extend the Tarver pool, Foard County, more than a mile to the northwest with their semi-wildcat test on the M. Phillips land, Section 276, block "A", proved unavailing after drilling to 2627 feet, with a surface elevation of 1393 feet. This test has been ordered plugged.

In the recently established Huggins pool, Cooke County, Danciger Oil & Refining Company's Huggins 1 proved to be a better producer than the discovery well on an offset location, having swabbed 275 barrels on 12-hour test from sand at 1148-55 feet. This pool was uncovered by the Fain-McGaha Oil Corporation's J. F. Huggins 1, Section 9, S. P. Ry. Survey, middle June.

Largest Producer in Lea County Bridges

Artesia, New Mexico.—A bridge or cavings checked the flow of oil from the largest producer in Lea County last week, and crews are now at work re-conditioning the hole to deepen. The C. W. Shepherd-government permit 1 of The Texas Company-Amerada Petroleum Corporation and Columbian Carbon Company ceased flowing July 17 after having made 820 barrels of clean oil during the previous 24 hours, and 1,352 barrels of fluid, 10 per cent. cut, on the day before at a total depth of 3300 feet. This semi-wildcat producer drew the spotlight July 7 when it flowed 65 barrels of clean oil per hour and 25 million cubic feet of gas daily after plugging back from 3223 feet to 2907 feet and sidetracking junk with a new hole by setting a whip stock.

The Shepherd well is located in Section 6-26S-37E, and its early performance gave rise to predictions that a prolific oil producing area had been located in Lea County after many disappointments and about an equal number of dry gassers and only fair sized oil wells. The drilling crew was at work early this week mudding off the gas coming from the hole to deepen with rotary, and tentative plans are to run a string of casing below the whipstock to reduce the hazard of losing the hole.

Mid-West Refining Company's Gregory 1, Section 31-25s-37e, located a short distance northwest of the above well, has mudded off 70 million cubic feet of gas encountered at 3065-71 feet, using 2000 pounds pressure on mud pumps to overcome the rock pressure, and will deepen to the Shepherd oil horizon. Empire Gas & Fuel Company's Clausson 1, Section 6-22s-36e, has also finished mudding off gas estimated at about 30 million cubic feet at 3480 feet, and is drilling ahead. This company's Martin 1, Section 28-20s-33e, developed 2000 feet of salt water at 3750 feet, and at last reports was drilling lime at 3805 feet. The blowing of gas production, rated at 70 million cubic feet daily, in Cranfill-Reynolds Company and Magnolia Petroleum Company's Meyers 1, Section 22-24s-36e, has been halted. This test began showing gas at 3175 feet, with a good show of oil at 3254-60 feet, and big gas was struck at 3435-38 feet.

Gulf Gets Sixth Well in Shipley Pool

San Angelo, Texas.—Shipley pool, located in southeastern Ward County, scored its sixth successful oil completion during the past week when Gulf Production Company's Wristen Brothers 1 flowed 88 barrels of 38.2° gravity oil from sandy-lime at 2420-60 feet while drilling in. This producer is a direct offset to the J-H-L Oil Company's Hayzlett 2, and along the northwest line of the Wristen Brothers 640-acre tract, which is held solid by the Gulf Production Company. Since the Wristen Brothers 1 is high on structure and showing for a better well than the average in the pool, the trend of production may take a course to the south, although this is the first completion made outside of the section except the Shipley Oil Corporation's discovery well. The latter concern is drilling below 1900 feet on its second test. The Shipley pool is abundantly supplied with pipe line facilities, as the Wickett Pipe Line Company and the Atlantic Pipe Line Company recently built lines into the area. The latter has arranged to serve the new producer.

Tidal Oil Company's University 1, located in Section 16, block 20, and about 3½ miles northwest of the Taylor-Link pool, Pecos County, has started plugging at 1602 feet after encountering a series of sulphur water horizons from 1315 feet to the bottom of the hole. This wildcat test was considered to be logging the key formations higher on structure than the Taylor-Link Oil Company's University 1, which opened the pool in the southwest part of Section 30, block 16, with a natural flow of 130 barrels at 1613-28 feet. However, the Tidal Oil Company is at work on two more tests located about one mile to the east and south of the above failure. The steady flowing performance of the Tay-

lor-Link pool discovery well has given rise to belief that an important oil producing area could be anticipated, but since its completion a failure has been drilled two miles to the east by the Shell Petroleum Corporation's University 1, Section 29, while an old dry hole exists about 2¾ miles to the southeast of the producer. All surrounding acreage is fee land of the University of Texas, and a number of discrepancies have been found lately in the location of section and survey lines, with the State land office and representatives of the University holding conflicting views on the matter.

In the Gulf-Waddell field, Crane County, Gulf Production Company's W. N. Waddell 6, Section 10, block B-23, developed a 40 million cubic-foot flow of gas when given a second shot of 320 quarts at 2972-3142 feet after plugging back from sulphur water at 3600-10 feet. This heavy flow of gas dwindled rapidly, and within two days was estimated at five million cubic feet. The well was spraying about 20 barrels of 31.2° gravity oil daily early this week while cleaning out.

Phillips Petroleum Company's plans went amiss when a 100-barrel pumper was cased off in its wildcat test on the Courtney-Pryor ranch, located in northwestern Pecos County, and a west offset drilled on the Bowser land. The former test made a producer in sandy-lime at 1345 feet last May while drilling with a big bit, and because of being prepared for a deep test, the hole has been carried deeper. Bowser 1 failed to make a producer in the expected horizon and encountered sulphur water at 1407-50 feet, with only a trace of oil. A twin location to the discovery well is now getting underway.

Artesia. — Another flowing oil well was added to the Jal field, located in southeastern New Mexico, early this week when the Humble Oil & Refining Company's Lindley 1 flowed 355 barrels of oil during first 12 hour gauge through a three-quarter-inch choke from regular lime at 3360 to 3375 feet. The gas flow accompanying the oil is estimated at 15 million cubic feet daily.

This producer is about two miles west of Jal, and is an east offset to a small pumper completed last April by Cranfill-Reynolds Company and Magnolia Petroleum Company.

The Humble Pipe Line Company has connected to the new producer.

Humble Will Build Gasoline Plant in Yates Field

SAN ANGELO, Texas.—Humble Oil & Refining Company has started construction work on a natural gasoline plant in the heart of Yates field with facilities to handle about 25,000,000 cubic feet of natural gas daily and an estimated recovery of about 20,000 gallons daily. Although this will mark the first attempt to handle sulphur gas in the Yates field, the West Texas district has three other large type of plants that are operating successfully on gas of a similar nature, including two plants in the Big Lake field and one in the Church-Fields-McElroy area, Crane County.

The site for Humble Oil & Refining Company's Yates field plant has been acquired on the I. G. Yates land, Section 34, amidst producing wells of The California Company. The absorption process is to be used, and two 80 h.p. and 12-200 h.p. Clark compressor units have been purchased for the plant, which is to be in operation late this year. Since the Yates field is located about 25 miles from the nearest railroad facilities, the natural gasoline production of the plant will in all probabilities be dumped into the crude run from the field by the Humble Pipe Line Company. Such a procedure is now taking place in Crane County and also the Texas Panhandle district.

The largest natural gasoline plant in the West Texas district is that of the Phillips Petroleum Company in Crane County, and the production of same is being sold to the Humble Pipe Line Company and mixed with crude. This plant was put in operation last January, handling about 50 million cubic feet of gas daily, and the current production is in excess of 49,000 gallons daily. Phillips Petroleum Company is also producing about 5500 gallons daily from its Noodle Creek field, Jones County, plant. Small plant units formerly operated in Mitchell County by The California Company, Atlantic Oil Producing Company and Magnolia Petroleum Company have been abandoned.

The Big Lake Oil Company and the Signal Gasoline Company of Texas have separate plants in the Big Lake field, and are manufacturing about 20,000 gallons of natural gasoline daily, with the latter running mostly on gas from the deepest well in the world.

Magnolia Petroleum Company has the only natural gasoline plant in Howard County, and is operating on gas produced by the shallow wells, which offer a negligible sulphur content.

Natural gasoline plants in operation and building in the West Texas district are shown below:

Company—	Location	Daily Production
Phillips Petroleum Company	Crane County	49,500
Phillips Petroleum Company	Jones County	5,500
Big Lake Oil Company	Reagan County	20,000
Signal Gasoline Company	Reagan County	21,000
Magnolia Petroleum Company	Howard County	750
Humble Oil & Refining Company	Pecos County	20,000(*)

(*) Building

Atlantic's Hendrick Runs Raised to 20,000 Barrels

San Angelo, Texas.—The Southern Pipe Line Company, which gathers and markets the Hendrick field production of the Southern Crude Oil Purchasing Company, Westbrook-Thompson Holding Corporation and Dixie Oil Company, has contracted to deliver an additional 7500 barrels daily to the Atlantic Pipe Line Company. This new contract boosts Atlantic Pipe Line Company's crude receipts from the above properties to an average of more than 20,000 barrels daily, and the oil is to be consumed in the Pennsylvania and Georgia plants of the Atlantic Refining Company. The combined daily production quota of the Southern Crude Oil Purchasing Company and its associates in the Hendrick field is a maximum of 46,773 barrels during the current proration period.

A 60-day cancellation clause is involved in the new contract between the Southern Pipe Line Company and the Atlantic Pipe Line Company, and the former is to gather and deliver the crude to the main field station and tank farm of the Atlantic Pipe Line Company. The crude purchaser is to pay the field posted price for the oil, plus 12½ cents per barrel gathering charge to the Southern Pipe Line Company.

Company Contracts for 500,000 Barrels of Oil

Midland, Texas.—The American Petroleum Company has contracted to purchase a maximum of 500,000 barrels of Hendrick field crude during the next six months from the various leases being operated in this field by the Texas State Oil Company and Cranfill Brothers Oil Company at the posted price at the wells. The latter two concerns are joint owners of the properties, and have a current production of about 2600 barrels daily, with one test nearing completion. This new contract is effective July 16 and supplements the 1,000,000-barrel contract made last February by the above parties that was scheduled to expire early in August. The two producing units were receiving five cents per barrel below the field posted price for their oil on the old contract, and by mutual agreement the old contract involving the low price has been terminated about 20 days ahead of expiration date.

The American Petroleum Company operates a six-inch line from the Hendrick field to a tank car rack on the Texas Pacific Railroad, east of Pyote, and is also handling the output of the Republic Production Company, an affiliated concern. The American Petroleum Company is delivering all of its runs from the Hendrick field to the Louisiana Oil Refining Corporation's Shreveport plant, having made a contract last February for the delivery of 1,500,000 barrels at five cents per barrel above the posted price f.o.b. tank cars.

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Salt Flat Outstanding Feature in Southwest During Year

By JACK LOGAN
Staff Representative

THE opening of a new Edwards lime field in Guadalupe County, 12 miles east of Seguin, through completion of The Texas Company's Dallas Wilson 1 on July 18 has been the latest important development in Southwest Texas.

The outstanding development of the Southwest Texas oil and gas area during 1929 has been the development of the Salt Flat field, Caldwell County. That field was opened in the summer of 1928 through the finding of production in the Austin chalk, and it assumed major importance in October, 1928, when the Sun Oil Company completed the first producer in the Edwards lime. It was not until late in 1928, however, that the development got well under way, and it was after New Year, 1929, that the production rose for the first time above 10,000 barrels daily. From that time on, however, the field was gradually extended northward until it had attained a total length of more than six miles. The production meanwhile kept on rising until it reached a peak of over 52,000 barrels one day the latter part of June. The average daily production during that month was close to 50,000 barrels. By now, however, the northern limit of the field has apparently been reached, and the development henceforth will be inside the area that is already proven. The production is already declining slightly from the high average maintained in June. For the week ending July 20 the daily average was 47,250 barrels. A large percentage of the undrilled territory is in the northern part of the field, and is controlled by the Humble Oil & Refining Company, and henceforth, as during the past few months, the new oil for the field will be added largely through completions by that company.

Maverick County Development

About Christmas, 1928, shortly after the discovery of Edwards lime production at Salt Flat, the Empire Gas & Fuel Company brought in a wildcat in northern Gonzales County as a producing well, flowing by heads from the Taylor marl at 3779 feet. When it was later put on the beam it made several hundred barrels daily of 32 gravity, black oil. This area is located about six miles south of Salt Flat, and for a time it was believed that it might be another fault field, somewhat like Salt Flat or Luling, even though the oil was altogether different and from a greater depth. About half a dozen tests were drilled in various directions and at various distances from the wildcat producer, but that first well was the only one of the area which produced any oil. After all those dry holes had been drilled, activity ceased in the area, and the nearest test being drilled now is Greene et al's Dix 1, located north of Bellmont; it is drilling around 1300 feet in lime.

An interesting development in Southwest Texas in March, 1929, was the finding of production by the Rycade Oil Corporation in Maverick County, 20 miles east of Eagle Pass, although the well which came in at that time proved a disappointment. That well was Chittim 3. It blew in on March 5, flowing by heads every three hours and producing from 150 to 200 barrels of 43 gravity oil per day. The production was from the Georgetown lime at 3205-07 feet. Several days later, however, it began making salt water, and it was subsequently decided to deepen the hole. The well is now drilling around 4300 feet in lime. The test is being put down with cable tools. Rycade Oil Corporation also has two other operations in the area, Chittim 4 and Sullivan 4, both being around 4000 feet deep now. In the same general area The Texas Company, several weeks ago made location for a test, Bandera County Land No. 1. It will also be drilled with cable tools, like all of the Rycade Oil Corporation Company tests. Before starting the present tests in Maverick County the Rycade Oil Corporation had abandoned five tests in the same area, but several of them had important showings of oil or gas, and one, Chittim 1, was particularly interesting. From the Glenrose lime of the lower Cretaceous at 5590 feet, Chittim 1 in April, 1927, tested 28,000,000 feet of wet gas and produced 100 barrels per day of 56 gravity distillate.

Gas Areas Exploited

In the gas areas of Southwest Texas there have been various interesting developments. The latter part of March the Houston Gulf Gas Company announced plans for construction of a 16-inch natural gas line from Refugio to Convert, just east of San Antonio, and two crews are now working on that line. It will be 106 miles long, and will cost around $2,750,000. It will serve numerous towns along the route, furnishing gas to both domestic and industrial consumers.

The Refugio field has been active during this year principally by virtue of oil tests, and numerous oil wells have been completed on the south, east and north sides of the field. To serve the oil producers at Refugio, the William F. Morgan interests are building a six-inch line from the field to Aransas Pass. For us in connection with that line two 55,000-barrel tanks have been erected at Refugio, and four of the same size have been put up at Aransas Pass. Aside from the oil production, there has been some natural gas development also at Refugio.

In the Saxet, Nueces County, and White Point, San Patrico County gas fields, there has been relatively little activity during the present year; the present requirements of pipe lines serving those fields is being fulfilled by wells already drilled.

Aqua Dulce gas field in western Nueces County is now inactive, due to lack of market for the gas. The field was discovered the latter part of 1928, and nine gas wells have been completed there. Several were drilled by the Aqua Dulce Oil & Gas Company, a Moody-Seagraves subsidiary, and several by the Houston Oil Company. The latter has a two-inch line out of the field, serving the towns of Aqua Dulce and Alice.

An apparently important gas area is being developed in northeastern Bee County by the Mission Drilling Company, a Moody-Seagraves subsidiary. This area is in the vicinity of the town of Pettus. The discovery well was drilled by Dr. H. E. Hewitt late in 1928. That well was Ray 1. It and a large block of leases surrounding it were sold early in 1929 to the Mission Drilling Company, which recently completed Ray 2 for 45 million cubic feet of gas at 2830 feet. Ray 1 is being worked over now, and Ray 3 is a new drilling test. As yet there is no pipe line outlet from the area.

Houston Pipe Line Company, subsidiary of the Houston Oil Company, built a four-inch natural gas line in April, 1929, connecting the Driscoll ranch gas field, Duval County, with its trunk line leading from the Cole field to Houston.

Sun Discontinues Use of Salt Flat Line

Luling, Texas.—The Sun Oil Company discontinued the use of its pipe line gathering system in the Salt Flat field, Caldwell County, effective 7 a. m. July 19, and arranged to transfer the bulk of its connections to the Petroleum Pipe Line Company of Texas. The former company entered the field with a pipe line shortly after the discovery well of the Edwards lime horizon was completed on its Cora Malone lease last October. Crude was transported from Luling by way of tank cars to the Gulf Coast for coastwise movement to the Atlantic Coast. During June, the Sun Oil Company handled an average of 2000 barrels daily from Salt Flat, including oil purchased from independents. The Petroleum Pipe Line Company's runs will be almost doubled through taking over the Sun Oil Company's system, and the oil will be delivered on a one-year contract to the Luling, Minerva and Angus refineries of the Central Texas Refining Company.

XUM

Cranfill-Reynolds Nucleus of Merger Involving Six Companies

Moody-Seagraves interests organize new holding company to consolidate producing, transporting and refining units

DALLAS, Texas.—The Cranfill-Reynolds Company, Inc., has been organized by W. L. Moody, III, and O. R. Seagraves, both of Houston, and a group of eastern capitalists to serve as a holding unit in the merger of Cranfill & Reynolds, Inc., Central Texas Refining Company, Moody-Seagraves Interests, Cody Petroleum Company, Union Exploration Company, and the Petroleum Pipe Line Company of Texas. The concerns involved in the merger have producing properties in the Rocky Mountain States and comprise a complete unit of production, pipe line, refineries and marketing in Texas. The parent organization has been formed under the laws of Delaware with a capital stock issue of 1,000,000 shares of non par value, and each of the operating concerns taking part in the merger are to participate in the stock issue to the extent that their holdings earn through appraisals by engineers.

Headquarters of the Cranfill-Reynolds Company, Inc., are to be established in Dallas early next month. O. R. Seagraves, president of the United Gas Company, has been elected chairman of the board of directors. Tom E. Cranfill, Dallas, president of Cranfill & Reynolds, Inc., which has been very successful as an oil and gas producing unit, with headquarters at Cisco, Texas, was elected president of the holding corporation and will be directly in charge of operations. Of the four vice-presidents elected, three are former officials of Cranfill & Reynolds, Inc., and are as follows: J. Harry Reynolds, A. H. Richardson and Walter L. Goldston, Jr., all now residing in Cisco. W. L. Moody, III, who is vice-president and treasurer of the United Gas Company, is treasurer and also a vice-president of the new organization. J. W. Cooper, Cisco, who has been attorney for Cranfill & Reynolds, Inc., was elected secretary, with the following assistants: Ruby Payne, Dallas; J. F. Reed, Houston, assistant to W. L. Moody, III, and J. F. Trevitt, Cisco. J. Harry Reynolds has been placed in charge of all drilling and production activities.

Cranfill & Reynolds Largest Unit

A daily net production of about 4500 barrels in Texas and New Mexico fields is held by Cranfill & Reynolds, Inc., thus making the latter concern the largest unit in the merger. More than 1200 barrels of this production is located in Salt Flat field, Luling district, with small producing leases in the nearby Lytton Springs and Yost fields. Production is held in the Corsicana-Powell, Richland and Nigger Creek fields, while the company has a number of oil and gas producing properties in Brown, Callahan, Coleman, Eastland, Shackelford and Throckmorton Counties, Central West Texas district. Cranfill & Reynolds, Inc., are developing a 9000-acre producing leasehold in Fisher County on a 50-50 basis with the Sun Oil Company, with a current production of 880 barrels. In West Texas, the company has 190 barrels settled production in Howard County, and 1300 barrels in the Hendrick field. In Lea County, New Mexico, the company has one small oil producer and a big gasser in process of completion through joint ownership with the Magnolia Petroleum Company. Considerable producing and semi-proven royalty interests in Texas and New Mexico are also held.

Cody Petroleum Company and the Union Exploration Company were put into the pool by the Moody-Seagraves Interests. The former concern has about 2000 barrels of daily crude production in Wyoming, and is at work on testing out four wildcat drilling blocks in the state. The equipment of the Union Exploration Company will be put into the pool.

TOM E. CRANFILL
President, Cranfill-Reynolds Company

Refining Unit

Central Texas Refining Company, which was formed under the laws of Texas with a capital stock of $100,000, with headquarters at Corsicana, and refining plants at Brownwood, Angus, Minerva and Luling, aggregating 9000 barrels daily capacity, is included in the merger. However, this concern will function as a refining and marketing subsidiary, with C. A. Middleton, Corsicana, president and general manager, remaining in charge. Central Texas Refining Company has between 1500 and 1800 barrels of settled production in Navarro, Milam, Brownwood and Coleman Counties.

Petroleum Pipe Line Company of Texas, maintains headquarters at Dallas, and operates a crude gathering system in the Salt Flat field, with the bulk of its deliveries having been previously contracted for by Central Texas Refining Company for one year. T. J. Mullin, Dallas, is president and a stockholder in the pipe line company, and the balance of the stock was held by Cranfill & Reynolds, Inc.

Cranfill-Reynolds Company, Inc., has an option on the purchase of the Midland Refining Company's 2500 barrel daily capacity portable refinery now in operation at Midland, Texas. This plant is running on West Texas crude delivered on contract by the Atlantic Pipe Line Company. T. W. Sowell, Dallas, is president of the Midland Refining Company.

Tom E. Cranfill is well known to members of the oil fraternity in the Southwest through his success in taking part in the drilling of all the important fields developed in the Balcones Fault zone and has had outstanding success in opening new pools in the Central West Texas district while operating as Cranfill & Reynolds, Inc., which was incorporated with a capital stock issue of $1,500,000 at the time of the above merger.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Third Terrebonne Parish Dome Verified by Well

HOUSTON.—For the third time The Texas Company has obtained production in Terrebonne Parish, Louisiana, in the first test drilled on a dome found by seismograph. This third instance was at Lake Pelto. In Lake Pelto B-1, located in Section 8-23s-18e, an oil sand was encountered at 1250-85 feet, and last week when 9¼-inch casing was set, the well tested 65 million feet of gas. Tubing was run later, and in 20 hours the well, spraying through the tubing, produced about 35 barrels of 18 gravity oil.

As previously pointed out, The Texas Company has two other productive domes in Terrebonne Parish. Bay Coon Road (or Bay St. Elaine) is located five miles north of the newly Lake Pelto dome. The first test there, Bay Coon Road B-1, was completed as a 20 million foot gas well at 675 feet. Dog Lake Bayou is the other productive dome. It is located 12 miles east of Bay Coon Road. Dog Lake Bayou A-1, the first test there, is a small oil producer at 1056-62 feet.

On the gas producing dome, Bay Coon Road, The Texas Company has the foundation ready for its second test, Bay Coon Road B-2, and has made location for the third well, Bay Coon Road B-3.

On the oil producing dome, Dog Lake Bayou, The Texas Company has a location made for its second test Dog Lake Bayou B-1 and is waiting on a rig to begin drilling. Location has also been made for another test Dog Lake Bayou B-2.

The above named three domes were acquired by The Texas Company from the Louisiana Land & Exploration Company, which discovered them, along with four other Terrebonne Parish domes and three in other parishes of South Louisiana.

Among those other four Terrebonne Parish prospects there are two which have been proved as domes with the first test drilled on each, one which has had important oil showings in the first test, and one on which the first test has just been started.

Four Isle Bayou dome is located about five miles east and a little north of Dog Lake Bayou dome. The first test there, Four Isle Bayou B-1, located in Section 23-21s-16e, topped cap rock at 560 feet, and according to a report last week was drilling anhydrite at 1300 feet.

Lake Barre dome, the most easterly of the seven Texas Company domes in Terrebonne Parish, is now a known salt dome. The first test, Lake Barre A-1, hit salt at 850 feet and was abandoned a little below 900 feet in salt. The Texas Company is now rigging up on the second test of the dome, Lake Barre A-2, located in Section 30-21s-20e. Lake Barre dome is only about 15 miles south and a little west from the Houma gas field.

Timbalier Bay prospect is now being drilled for the first time. The first test, Timbalier Bay A-1, is now down around 2800 feet in shale. It had an oil show in a sand at 2365 feet, but tested salt water, and again had a showing at 2650 feet, but that sand also was passed up after testing.

The prospect on which the first test has just started drilling is Taylor Bayou or East Bayou Junop. The Texas Company is drilling at 200 feet in that test, Taylor Bayou B-1, located in Section 28-21s-14e.

Second Well Abandoned At Port Barre Dome

Houston.—Gulf Refining Company of Louisiana has abandoned Gaudet 1 on the Port Barre dome, St. Landry Parish. It is the second test finished on that geophysically discovered dome. The first, also, was a failure. It was The Texas Company's Botney Bay Lumber Company Fee 1.

The test which the Gulf Refining Company abandoned had tested salt water when screen was set in a promising sand at 3830 feet, and had been deepened from that horizon. It went into cap rock around 4025 feet, and into salt at about 4100 feet. It was abandoned at 4230 feet in salt.

The Texas Company's Fee 1 also was abandoned in salt, although it produced a little oil at 3765 feet before going dead and being deepened to the salt. It came in at 3765 feet showing over five million feet of gas and flowing 23 gravity oil at the rate of 800 barrels daily.

Following abandonment of its first test, The Texas Company started another, Botney Bay Lumber Company Fee 2. Screen was set in this well at 3620 feet about the middle of June, and the well came producing about 100 barrels per hour, together with considerable gas, but it soon died, as the first well on the dome had done. Tubing was run, and other efforts were made to bring the well back, but they were futile, and preparations are now being made to deepen it.

Two Wells Abandoned in Humble Oil Field

Houston.—Three tests were abandoned as failures during the past week in the southeast part of Humble field, where new production was opened in broken sands between 4000 and 5000 feet. Humble Oil & Refining Company abandoned Williams 1 at 4887 feet. The Texas Company abandoned Wheeler & Pickens 21 at 4300 feet. The other abandonment was Harvey Smith's Bailey 1 at 1750 feet.

Humble Completes Two Wells at Sugarland

Houston.—Humble Oil & Refining Company, sole operator at Sugarland, Fort Bend County, completed two producing wells there during the past week. Nelson 4 was finished for 1200 barrels initial production at 3706 feet, and Nelson 3 came in for 1000 barrels at 3573 feet.

Raccoon Bend Has Five Completions in Week

Houston.—The average daily production at Raccoon Bend during the week ending July 20 was 6700 barrels, and during that period five wells were completed, including two shallow gas wells. All were Humble Oil & Refining Company and Valley Oil Corporation wells, those interests being in complete control of the field.

Koehn B-1 was finished for five million cubic feet of gas at 1012 feet, and H. Mahnke 1 was completed for 2,500,000 feet of gas at 1021 feet. Mitchell B-1 came in for 400 barrels at 3515 feet; Thompson 4 for 300 barrels at 3220 feet and Mitchell A-1 for 100 barrels at 3390 feet.

Stark's Dome

Houston.—Gulf Refining Company of Louisiana is drilling shale at 6130 feet in Lutcher-Moore 15 at Stark's Dome, Calcasieu Parish, and is fishing for drill stem at 6700 feet in the other test which it is drilling there, Industrial Lumber Company 13.

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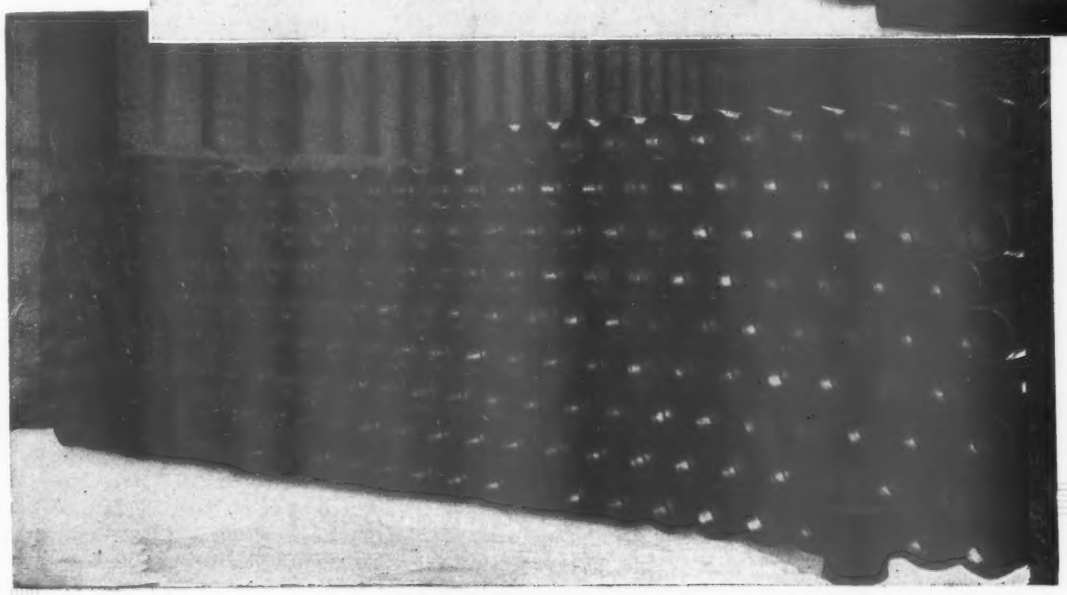

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The Texas Company Opens New Field in Guadalupe County

HOUSTON.—A new Southwest Texas field was opened on July 18 when The Texas Company brought in Dallas Wilson 1 in the James B. Darst Survey, eastern Guadalupe County, for 1500 barrels initial production from the Edwards lime at 2610-11 feet. When the drill had penetrated one foot into the lime, the well was swabbed for two hours and produced at the rate of 52 barrels per hour, and later flowed by heads at short intervals. Due to the lack of storage it has been shut in. The crude from the well tests 36 Baume gravity.

This wildcat producer is located about 12 miles east of Seguin, and about 15 miles southwest of Salt Flat field, just outside of Luling. In various respects the new area is closely related to Salt Flat. In the first place, it is on a direct line with Salt Flat, and furthermore, the production tests about the same gravity and is from practically the same depth. Salt Flat production tests from 35 to 37 degrees gravity, and comes from depths ranging from 2665 to 2750 feet below the surface.

Transportation Provided

Like Salt Flat and the old Luling field, the new area opened by The Texas Company wildcat is along the Balcones fault zone, but the first Luling field is evidently on a fault separate and distinct from Salt Flat and the new Guadalupe County prospect. The original Luling field produced 28 to 29 gravity crude at depths ranging from 2100 to 2200 feet.

The new Guadalupe County field is considered sufficiently promising by The Texas Company to warrant its going ahead with laying of a pipe line (six or eight-inch pipe) from the area to a point near Dale, 45 miles distant, where connection will be made with the new line of The Texas Pipe Line Company leading out of West Texas to Port Arthur. Humble Oil & Refining Company, which has extensive acreage in the Guadalupe County area, is also planning to construct an eight-inch line to connect the area with its main line from Salt Flat to the Gulf Coast.

The new producer is in the northeast end of a 40-acre tract. Immediately north of that tract the 50-acre Lemmie Anderson tract is also held by The Texas Company. North of the Lemmie Anderson tract is the 51-acre Cercy Anderson tract under lease to the Gulf Production Company. On the Lemmie Anderson land, The Texas Company has made location for No. 2, a direct north offset to the producer, and for Nos. 1 and 3 in the northeast and northwest corners, respectively, of the tract. On the Cercy Anderson lease Gulf Production Company has made location for No. 1, offsetting The Texas Company's Lemmie Anderson 1.

Attempt East Extension

To the east of The Texas Company's discovery tract Gulf Production Company holds a lease on the Tadlock heirs 100-acre tract, and on that tract has made location for No. 1. This will be a particularly interesting test, as it will determine whether or not the production will extend that far east, just as Gulf Production Company's test on the Cercy Anderson, and The Texas Company's most westerly test on the Lemmie Anderson land will be of importance in shedding some light on the western limits of production. If the field will run true to type, that is, like Salt Flat, Luling and other fields of this section of the Balcones fault zone, as it very probably will, then the production will be along a narrow fault line running in a northeast to southwest direction.

The lease adjoining The Texas Company's discovery tract is held by the Humble Oil & Refining Company. Aside from the leases that have been mentioned, the acreage is divided up principally among four major companies, The Texas Company, Humble Oil & Refining Company, Gulf Production Company and Magnolia Petroleum Company. Humble Oil & Refining Company, perhaps, has the largest amount of promising acreage. That company has made several tentative locations, but has not yet definitely decided upon them.

C. B. McKinney, Gas Official, Dies at Houston

Charles B. McKinney, general manager of Houston Pipe Line Company, and a leading figure in the gas industry in Texas for many years, died Tuesday, July 16, following an attack of heart trouble. He was also a director of the Houston Natural Gas Company, subsidiary of Houston Pipe Line Company, and had been identified with the gas industry in the South for more than a quarter of a century.

McKinney was born 44 years ago at Cotulla, Texas, and spent his boyhood in the Mexican border region. In 1908 the joined the Galveston Gas Company and four years later moved to Biloxi, Mississippi, in connection with gas work. Shortly thereafter he joined the North Texas Gas Company at Dennison, Texas, and in 1914 was made vice president and general manager of that company. In 1916 he was elected president of the Dallas Municipal Gas Company, which he served until five years ago when he joined the Houston Pipe Line Company. Under his management as an efficient builder this concern has grown to one of the leading distributors of natural gas in the country.

Frank W. Kirk, general superintendent of Houston Pipe Line Company, has been named acting general manager following McKinney's sudden death. Kirk has been instrumental in all of the major projects which the company has completed in the past few years to supply domestic and industrial supplies throughout South Texas.

C. B. McKINNEY

McKinney was a member of the Arabia Temple Shrine, the Rotary Club, Houston Club, River Oaks Country Club and Houston Yacht Club. He was very active in Masonic work, and just recently returned to Houston from a Shrine tour to Honolulu.

He is survived by Mrs. McKinney; two daughters, Charlotte and Rosemary; two sons, Charles B., Jr. and William McKinney; a brother, Roy McKinney of Little Rock, Arkansas; two half brothers, Wilbur and Eugene Taylor of Corsicana; three sisters, Mrs. William Martin and Mrs. Larry Harper of Eagle Pass, Texas and Miss Bertha McKinney of San Antonio; and his step-father, W. W. Taylor of Eagle Pass.

Logan County

Tulsa.—Healdton Oil & Gas Company et al's Gregg estate 2, SWc Section 29-18-4w, in the Crescent district of Logan County, Oklahoma, has been plugged back to 6656 feet in the Hunton lime. It swabbed 50 barrels. If it makes a commercial well it will be the deepest producer in the state, exceeding the Mid-Kansas Oil & Gas Company's Fortson 1, Section 24-11-3w, in the Oklahoma City field, by about 100 feet, however, the Mid-Kansas well is a much better producer. Total depth of the Gregg estate test was 6968 feet, where it had water.

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News From Rocky Mountain Fields

Operators Consider Deep Test For Bannatyne

Great Falls, Montana.—The principal acreage holders and operators in Bannatyne field, about 45 miles north of this city, are considering a joint deep test for the field. The field has a first producing sand of about 70 feet in thickness; the wells are small, averaging about 10 barrels from the first sand, and about 20 from a recently-discovered second horizon. A deep test would be of great interest.

Montana Power company is stringing a power line into the Bannatyne field. This will be completed in a short time and will provide electricity for drilling.

Pennsylvania Test

Ribera, New Mexico.—Cibola Petroleum Company will drill a wildcat well on a structure adjacent to this town. It will be a test to the Pennsylvanian, expected around 3000 feet.

Red Mesa Wildcat

Denver.—Royal Producers & Refining Company will resume operations at its wildcat well in LaPlata County, Colorado, on the Long Hollow structure, as soon as road building operations are completed and materials and equipment are moved in. The well has been standing at 860 feet since last fall. Location is in the Red Mesa territory where there have been several wells drilled during the last five or six years. All have had good showings, but nothing commercial has been developed.

Carbon County

Casper, Wyoming.—Producers & Refiners Corporation is moving in a machine for a test of the Grenville structure, in Carbon County, Wyoming. Some wells have previously been drilled on this structure, but none developed production worth while.

Government Royalties

Casper, Wyoming.—The federal government, during May received the following in royalties from gas and oil on the public domain in the Rocky Mountain states: Oil $214,647.42; gas $11,407.08; and gasoline $8,505.19. This is a total of $234,559.69.

Jal Well Producing 1750 Barrels Per Day

Jal, New Mexico.—The well which apparently makes southeastern New Mexico look more promising than any other is the No. 1 Charles W. Shepherd, recently completed on land owned jointly by the Texas Corporation, Amerada Petroleum Corporation and Columbian Carbon Company, which is producing about 1750 barrels of 29 gravity oil per day from 3300 feet. The well also produced 30,000,000 cubic feet of gas per day.

Gas Line Construction

Casper.—The gas line from the Sand Draw field in Fremont County, Wyoming, to Casper, is to be rebuilt. Camps are established and the work started. The latest and best engineering practices are to be followed on this work which is to be carried on without interrupting the service to the city.

Possible New Gas Field Found in Wyoming

Rock Springs, Wyoming.—There is considerable significance attached to the discovery of gas by Mountain Fuel Supply Company in the well on Middle Baxter Basin structure, east of this city. The gas was found in the top of a sand in the Morrison formation, and drilling is suspended while casing is being run. It would appear that the Mountain Fuel Supply Company has developed a new supply for its long pipe line into Salt Lake City.

Gas Line to Coalville Is Nearing Completion

Rock Springs, Wyoming.—The work is almost completed on the 116 miles of trunk gas line from the town of Green River in Wyoming to Coalville, Utah. This is 18-inch pipe which is laid under the supervision of Frank McCarthy, vice president and general manager of the Uinta Pipe Line Company. Excellent time has been made on this job which has presented endless problems. The line will furnish Salt Lake City and Ogden, as well as intermediate towns, with a supply of natural gas from the South Baxter Basin and Hiawatha dome fields in southwestern Wyoming.

Tidal to Test Structure South of Maud Field

Tulsa.—Tidal Oil Company will drill a test in the SWc Section 29-8-5, south of Maud in Pottawatomie County, Oklahoma. The acreage is owned by Mid-Kansas Oil & Gas Company. A promising sub-surface structure is said to have been found on the lease.

Kevin-Sunburst Deep Test Shows Oil and Gas

Great Falls, Montana.—The deep test in the Kevin-Sunburst field, being drilled by the Potlatch-Adams interests, reports more gas and definite showings of oil continuing as the drill goes below 4365 feet. These showings are of the utmost interest to those operators who would benefit in this district, and the developments in the next few weeks at this well will be watched very closely and with some little excitement. The showings have been definite enough to cause the Texas-Pacific Coal & Oil Company to start a similar test on its holdings in the field.

Skelly Oil Production Shows Big Increase

Skelly Oil Company produced 3,050,950 barrels of crude oil during the first four months of 1929, or an average of 25,426 barrels daily, as compared with 1,255,486 barrels of 10,376 barrels daily during the same period of 1928.

The company produced 54,318,632 gallons of gasoline during the first four months of this year against 50,006,736 gallons last year. Production of lubricating oils and other refined products was 7,753,860 gallons.

A total of 13,424,642 gallons of refined products was marketed by the company through its own stations during the four months ended April 30, against 12,832,337 gallons in the same period of 1928.

Skelly Oil Company owns 791,736 acres of undeveloped and producing lands, of which 57,912 acres are producing. Most of the company's acreage is in Kansas, while the greater part of its current production is in Texas.

Rooks County, Kansas, To Be Drilled Soon

Tulsa. — Central Commercial Oil Company of Tulsa is starting a wildcat test on the J. E. Baxa farm, in the NEc SW SE Section 22-9s-17w, Rooks County, western Kansas. The new test is on a block of about 3000 acres and is to be carried to 3600 feet unless oil or gas is found in commercial quantities at a lesser depth.

Central Commercial Oil Company gained prominence several weeks ago by completing a rank wildcat test on a large block of acreage in Trego County, western Kansas. This discovery well is pumping 55 barrels daily now. The Trego County producer is about 40 miles southwest of the new Rooks County test of the company.

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Louisiana-Arkansas Field Notes

Monroe and Richland Fields Active in Anticipation of New Lines

SHREVEPORT, La.—With a line of small producers and failures along the north edge of Dixie field, Caddo Parish, Louisiana, members of the oil fraternity received considerable encouragement last week from the behavior of the D. C. R. Oil Company's Oden 1, NE NW Section 20-19-14, south of the present producing area.

With total depth of 2423 feet the test showed 700 feet of oil in a drill stem test. The test was made after 21 feet of sand and shale had been encountered.

To offset this optimistic trend in the new area, Lide and Davidson's Oden 1, SE SE Section 21-19-14, is coring at 2415 feet after failing to show anything more than slight traces of oil.

Standard Oil Company of Louisiana, added the ninth producer of the field during the last week when Henderson 2, SE SE Section 7-19-14 was placed on the beam and is making 25 barrels daily from total depth of 2407 feet. The daily yield of the district is now in excess of 1,400 barrels.

In NW NE Section 8-19-14 Ray-Dawes Drilling Company's Hunter Estate 1, tested dry at 2502 feet after a drill stem test from 2393 to 2436 feet failed to show anything.

Monroe and Richland Active

With completion of three large gas lines to the Monroe and Richland fields expected early in the fall, these gas fields are showing considerable activity. This activity is especially marked in the extreme northern edge of Richland Parish where extreme care is being used in setting second and third strings of casing. So uneven is production of gas in this locality that a hole here that is a failure may be offset by a huge gas producer and the gas may be encountered higher than was expected.

On the south edge of the Richland field Southern Carbon Company which several weeks ago completed Tegola 1, Section 4-15-6e, as a 46 million foot gasser, is having trouble with Tegola B-1, Section 5-15-6e, which after testing a quarter of a million feet of gas at 2461 feet was drilled 2478 feet and showed about the same amount of gas with 3,000 barrels of salt water. It was two feet higher than this that Tegola 1 was completed.

Two Sabine Parish tests which have been arousing considerable interest recently have not yet developed production. R. L. Gay, Trustee, and H. D. Easton drilled in and went down in chalk rock some depth in Sabine Lumber Company 2, Section 23-7-14, but bailed it dry except for small showings. Eight and one-fourth inch casing had been set at 2109 feet. The well is now drilling chalk rock at 2300 feet. A. H. Tarver's Long-Bell Lumber Company 1, Section 29-7-13, has delayed a test at 3535 feet until a later date. Tarver will probably ship in another rig and drill to the Nacatosh sand around 2100 feet above testing the other hole.

Gay and Easton Drilling Ahead

Gay and Easton drilling Bowman-Hicks 4, Section 14-7-14, 700 feet west of the discovery well in the same section, has set 68 feet of 12½ inch casing and is drilling ahead, using from Bowman-Hicks 3, which has a separator installed. This new location is the "pet" of Easton who made location for all of the Gay and Easton tests in that locality. The same operators have bailed dry in their Long-Bell Lumber Company 1, Section 26-8-14 at 1853 feet after having set eight and a quarter inch casing at 1839 feet. The latter test is drilling now at 2220 feet.

Gay will drill one deep test on a block of acreage at Loring, Sabine Parish, several miles southeast of his two producers, before drilling 20 shallow tests in the Loring block. He expects to start the deep test before September 1.

Magnolia Petroleum Company may drill the deepest hole ever sunk in Louisiana in McCook and Hibbler 1, Section 22-21-10, Cotton Valley district, Webster Parish, which is now down to 6466 feet where it is coring red shale, a formation which has been continuous since just above 6100 feet.

Probably the most interesting development of the week in South Arkansas was Sundby and associates' Farris 1, Section 27-15-15, Ouachita County, in the old Smackover area, a quarter of a mile northeast of nearest production. This well with total depth of 2060 feet is looming as a possible 100 barrel producer and may start renewed drilling in that direction.

Watch Two Wildcats

Two rank North Louisiana wildcats are being watched with more than passing interest at present. V. E. Shaw and associates are reported to have had a gas show at 2765 feet in Voss 1, Section 1-20-3, Lincoln Parish. George O. Baird, drilling Tremont Lumber Company 1, Section 24-16-1w, Jackson Parish, is drilling at 3095 feet after getting some gas with salt water in a drill stem test from 3037 to 3046 feet.

West Carroll Parish has been added to the list of wildcatting areas in North Louisiana. W. F. Hyde has up a derrick on a large block of acreage. Location is in Section 24-23-11.

Transcontinental Oil Company will drill one or more tests, it is reported, in the vicinity of two tests drilled last year in Forehouse Parish by The Texas Company and by Woodley and Collins, both arousing considerable interest. The Transcontinental Oil Company has acquired 2,000 acres in township 20 and 21, range 7 in that parish.

California Crude Stocks Reach All-Time High

Los Angeles.—Total stocks of all petroleum products in California increased 5,475,590 barrels during June, reaching a high mark for all time with a grand total of 165,270,399 barrels. Refinable crude, 20 degrees A.P.I. and lighter, showed an increase of 2,839,119 barrels during the month, total stocks standing at 33,294,635 barrels. Heavy crude stocks, including all grades of fuel oil, jumped 1,506,378 barrels for a grand total of 104,428,124 barrels. Gasoline stocks increased 147,040 barrels to 14,265,792 barrels. Stocks of naphtha distillates jumped sharply, showing an increase of 667,504 barrels. Miscellaneous stocks increased 305,549 barrels.

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HALLIBURTON

OIL WELL CEMENTING COMPANY

DUNCAN, OKLAHOMA

Kansas Wildcat Activity Remarkably Successful During 1929
(Continued from page 70)

dary of the state toward the Colorado line. The well made 75 barrels daily after being put on the pump from 3960-72 feet. A very important phase about the well was that its producing horizon was a true sand, which condition heretofore was lacking in western Kansas. Chat and lime had been the producing formations of the region.

Phillips Petroleum Company's Leigleiter 1, NEc NW SE Section 10-16-18w, 11 miles south of the Danciger's Schmeidler well, and in Rush County, was completed for a small gas producer.

A new field was opened in Edwards County when British-American Oil Company's McCarty 1, SE c Section 31-25-17w, near Kinsley, reached a depth of 4545 feet and came in for 10,000,000 feet of gas. It was later doing 14,000,000 feet with 865 pounds of rock pressure. This is the deepest producer in western Kansas. It is also spraying about 75 barrels of oil daily.

Barnsdall Oil Company's Lauckl, C SW Section 35-18-21w, attracted oil men's attention to Ness County when after cementing the casing on the top of a chat at 4229 feet, it commenced flowing 10 barrels of oil and water per hour.

Prairie Oil & Gas Company and T. B. Slick started a play in the Hoisington district of Russell County where their Lucinda Sellans 1, SW NE Section 36-15-13w, exceeded its expectations. The well pumped 305 barrels and did not pump off. The gravity is 38.1 degrees Baume. Total depth of the hole is 3355 feet.

In addition to the above mentioned producers that were completed there were showings in practically every wildcat test drilling in western Kansas. Much can be expected of the region during the next six months.

New Production Found Over Wide Area and at New Depth in West Texas
(Continued from page 71)

Block 10, H&GN Ry. survey, established oil production in northern Pecos County along the so-called Fort Stockton-Hendrick field lime high last November in lime at 1626-37 feet making 120 barrels initial. Several additional small producers have been completed in this immediate territory, including one dry gasser by O. J. Perren et al's H. J. Eaton 1, Section 27, Block 3, H&TC Ry. survey, testing 18 million cubic feet at 1490-1502 feet.

Phillips Petroleum Company furnished a surprise completion for northwestern Pecos County last May when Courtney-Pryor 1, Section 78, Block "OW", T. M. Ry. survey, made 150 barrels clean oil on initial pumping gauge from lime at 1345-67 feet, and after pumping for about 10 days, with production holding at 100 barrels daily the hole was deepened. This wildcat encountered the oil horizon with a big bit, as it was originally scheduled for a deep test. The oil horizon was passed through at 1375 feet, and sulphur water found at 1840 feet, but drilling is being continued below 2100 feet, with the upper oil horizon cased off. Phillips Petroleum Company's D. W. Bowser 1, a west off-set to the above wildcat, has since been drilled below the discovery lime horizon without making a producer, so the importance of this area is in a doubtful stage, while in the meantime a twin location has been made against the first well.

Howard County

Completion of a 4200-barrel flowing well by the Henshaw Oil Corporation's wildcat test on the W. R. Settles "A" lease, Section 6, Block 32, T & P Ry. survey, T-2-S, gave an impetus to field work in Howard County, and established a new producing area as well as a new horizon at 2208-2232 feet. This strike was made in August, and the property was acquired in November by the American-Maracaibo Company, with a recovery of nearly 700,000 barrels of crude up to the close of June. The Henshaw-Settles discovery well has been responsible for the drilling of more wells, and producing a greater volume of oil than any other strike made in the district within the past 12 months. This 2200-foot pay has 20 wells on production, and these are credited with having produced about 1,800,000 barrels of oil since last August. Possibilities of a southwestern production trend from the Settles area were considered quite likely when the World Oil Company's L. S. McDowell 1-C, Section 21, Block 34, T & P Ry. survey, T-2-S, opened a new pool in Glasscock County, making 250 barrels of oil on initial gauge at 2351-98 feet last April. This producer is about seven miles southwest of the Settles field, with no dry holes in between.

Drilling Activity to Be Less Pronounced
(Continued from page 61)

A survey of conditions in the leading fields of West Texas discloses that drilling will continue on a moderate scale throughout the balance of 1929. The Yates field, which constitutes one of the largest known crude reserves in the country, will probably be subjected to a small but steady development campaign over the balance of this year. The Gulf-McElroy and Gulf-O'Brien areas are largely controlled by the Gulf Production Company and future plans for development indicate that this work will be scattered over the next two years. The Big Lake field offers several hundred proven locations that could be drilled profitably, but this field is closely held and development will be carried out on a conservative basis. The Church and Fields area, Crane County, will probably experience a light development program over the balance of this year, with flush production lacking. In other areas, such as McCamey, World-Powell, Westbrook, Noodle Creek, Tiner-Smith and Stephens pool, there is little new work in sight.

Southeastern New Mexico is shaping into a possible major drilling and producing area in the near future. Lea County has more than a half dozen separate oil producing areas and an even greater number of spots that are producing gas in commercial quantities. It is not expected, however, that any intensive drilling campaign will be witnessed in this area during the balance of 1929. The Texas Panhandle is slated for a boost in production during the next two months. This is due to a belated drilling campaign in Gray County where activity seems to be gaining momentum. Current crude demand and prices are influencing operators in Hutchinson, Carson, Moore and Wheeler Counties in building up their oil production by drilling more tests on proven undeveloped leases.

An active drilling campaign is anticipated in North Texas. Wilbarger and Archer Counties are destined to share liberally in this new work, while a steady but conservative drilling campaign is assured for Wichita, Young, Jack, Cooke and Montague Counties. Foard, Throckmorton and Haskell Counties are also due to witness an increased wildcat campaign this year.

Drilling will probably lag in Central West Texas because of the absence of any appreciable volume of proven, undeveloped acreage there.

Another Oil Field Looms As El Dorado

San Angelo.—Schleicher County made a bid early this week for entrance into the ranks of oil producing counties in the West Texas district through the Phillips Petroleum Company's wildcat test on the Whitten ranch, located at the center of the northwest quarter of Section 35, Block "LL", T. C. Railroad Survey, developing about 600 feet of oil in the hole from sandy-lime at 4110 to 4137 feet. Several hundred feet of salt water passed through at an upper level and is also in the hole, with a string of eight-inch casing landed at 3390 feet. Pipe is to be set and a test made for production.

This wildcat test is about five miles northwest to El Dorado, and that name recalls that the El Dorado in Arkansas and Kansas came through with important oil fields.

Having cemented five-inch casing at 7809 feet, the Big Lake Oil Company resumed drilling early this week on its University 131, Big Lake field, and at last reports was logging soft shale at 7816 feet.

In Irion County, the deep test of the Kingwood Oil Company on the Sugg ranch was drilling sandy-lime formation at 7420 feet late last week, with the last string of casing consisting of six-inch pipe landed at 3382 feet, thus leaving more than 4000 feet of open hole.

XUM

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Santa Fe Springs Reaches New Peak and Declines Slightly

LOS ANGELES.—Santa Fe Springs touched 300,000 barrels for a brief period during the past week, but a slight lull in completions during the latter part of the period brought the field total down considerably and production rested at about 290,000 barrels on July 20. The new peak was fully 50,000 barrels more than conservative estimates of three months ago had indicated and compared favorably with the high record of 1923, when the Meyer zone helped to throw the entire industry out of balance.

The O'Connell zone has proved its metal and the resistance it has shown toward a decline has been almost uncanny. About 75 wells have been completed in this very compact sand and the daily average is now more than 3000 barrels per well, or a very high percentage of the initial average of the same group. The unusually low gas-oil ratio, regarded at first as a questionable factor toward a long flowing life, has placed the zone in a class by itself in the field. Some of the best wells are making only a small amount of gas, and singularly these wells have shown the smallest declines. This smaller amount of gas has been a boon to operators who have had to waste enormous quantities against the economic laws of the industry.

Decline in Output Delayed

It is still the favorite practice to open some of the upper Clarke zone in connection with the O'Connell sand. In the inside wells, it is questionable whether there is a distinct break between the two sands, while it is a common practice to call the wells producing from both zones merely O'Connell zone producers. Wells near the edge of the O'Connell seem to show a distinction between the two zones. The full O'Connell zone is included below the final shutoff, it not being unsual to have 650 feet of producing sand, of which perhaps 150 feet is the upper Clarke. The inclusion of this thick body of compact sand is largely responsible for the slow decline of the best producers. Water has caused little trouble in O'Connell zone producers for several weeks.

Although a sharp decline has been "just around the corner" for several weeks, a survey of the O'Connell zone drilling wells fails to bear out this theory. It will be a difficult matter to keep production around the 300,000-barrel mark, but a sharp decline to around 150,000 barrels is out of the question. Twenty-nine wells are drilling in, 16 are cemented over and 14 are ready for completion in the zone. These wells certainly should largely offset the decline from the 75 wells already completed, unless something unexpected develops. Of the 59 wells within striking distance of production, at least 30 should be completed within the next four weeks. With an average initial production far below that of earlier completions, the O'Connell zone will give a good account of itself for a good many weeks.

Long Beach, Calif.—Shell Oil Company is drilling 9045 feet in Nesa 11, deepest hole ever drilled in the world, the formation showing hard sand. Rotary tools are being used on the Long Beach field's deep well.

The third Clarke zone, as it is now called, is claiming the interest of many operators who failed to get production in the shallower sands. About 25 wells are drilling with this zone in view and as activity decreases in the O'Connell sand, twice as many wells will be continued to or started for this unusually deep formation. Regarded at first as a zone of little possibiliteis, the sand already has a production of 7500 barrels from eight wells, nearly all of which are about 8000 feet deep. The lower Clarke zone, now called the second Clarke, is being cased off and wells continued to the third Clarke sand. At first these formations were classed as one zone, but all of the sand below the point at which the enormous "kick" is found has been renamed.

Third Clarke to Resist Decline

Operators are taking stock of equipment and generally marshalling their forces to tap the third Clarke zone in outlaying leases, where only the Meyer sand has been worthwhile. The new deep sand is fully as large in lateral extent as the Meyer zone, and may be even larger. A new era in drilling has arrived and the 8000-foot level will be reached with all the ease that the 5000-foot mark was touched several years ago.

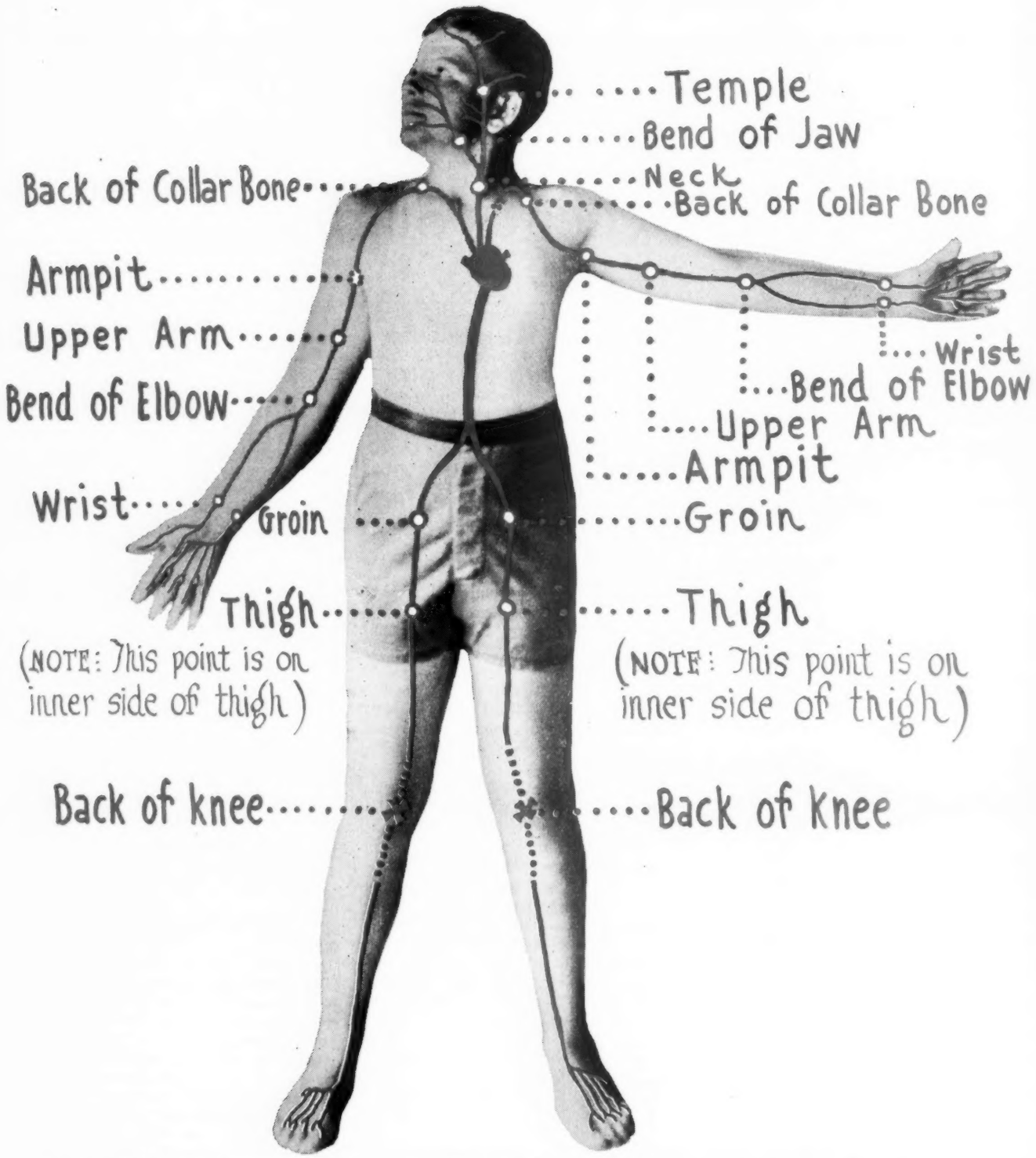
The third Clarke sand is standing in the way of a field decline, although its development may be slow enough to maintain a fairly high field average, rather than create another peak several months hence. The sand has a tremendous pressure and its thickness probably will be sufficient to make long-lived producers. Leases that have been of little value offer unusual promise below 8000 feet, and operators will not be slow to sense the situation. As it now stands, most of the companies have their hands full in drilling wells nearer the center of the field, but the third Clarke sand will be a factor at Santa Fe Springs for some time to come. No wells have been drilled deep into the sand near the apex of the structure, a point which is expected to be especially prolific below 7500 feet.

Associated Oil Company is ready to run casing in Dallugge 7, which has been drilled to 8100 feet and which promises to make one of the best producers yet drilled to the third Clarke sand. About 150 feet of the rich sand below the upper part of the lower Clarke series has been cut and the well is showing unusual life. Dallugge 7 was a failure in both the Buckbee and O'Connell zones and a large production below 8000 feet will be especially welcomed.

Richfield Oil Company is still worrying with Elliott 2, which was tested unsuccessfully in both the upper and lower Clarke zones. A string of 4¼-inch casing was cemented over the lower Clarke, making the hole so small that it was difficult to reach the third Clarke sand. The casing will be pulled from a point as far down as possible, the remainder sidetracked and the hole continued. This well stands a good chance for production in the third Clarke sand.

Total initial production of the 10 wells completed during the week was about 38,000 barrels. The well average was slightly less than during some of the previous

Course of Arteries and Pressure Points



Arterial bleeding can be controlled by applying pressure at any point shown which is between the wound and the heart. Pressure may be applied with fingers, tourniquet, compress or constricting bands such as handkerchief, belt, strap, etc. DO NOT use wire, rope or cord. Pressure must be released for a few seconds, every twenty minutes, to prevent gangrene.

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No. 1—Starting position.

No. 2—Beginning of Exhalation.

No. 3—Completion of Exhalation.

Cuts 2, 3, 4 and 5 show the respiration cycle. This should be completed at the rate of fifteen times per minute. Apply sufficient pressure in position number 3 to expell the air from the lungs by compressing the chest cavity.

No. 4—Beginning of Inhalation.

No. 5—Completion of Inhalation.

The Mid-Continent Petroleum First Aid Contest, the first of which was held in 1925, has become one of the outstanding events of the International Petroleum Exposition. Each year has shown an increasing interest in the contest, based on the yearly improvement in the contest itself, the constantly increasing activity in First Aid Work, and the growing recognition of the true value of First Aid Training to the industry. We approach the Annual Contest with more than seventeen thousand trained first aid men in the Mid-Continent Oil territory and over three hundred living examples of the effectiveness of the work —men who today would be in their graves were it not for the trained ability of their fellow workers. Certainly, this is ample compensation to all those companies and individuals who have labored so effectively to establish Safety and First Aid work as an integral part of the Petroleum Industry.

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Safety Section

Mid-Continent Oil & Gas Association

Tulsa, Oklahoma

weeks but high enough to prove that the O'Connell zone is a great producer.

Deep zone production touched 276,000 barrels from 152 wells at the peak of the week, distributed as follows: Nordstrum, 22,000 barrels from 25 wells; Buckbee, 25,000 barrels from 48 wells; O'Connell, 220,000 barrels from 70 wells; Upper Clarke, 1700 barrels from one well, and lower Clarke, 7500 barrels from eight wells.

The O'Connell zone is now producing more oil than the entire field yielded during the peak from the Buckbee and Nordstrum sands early in March. The well average in better than 3000 barrels, or about the average initial production from the Buckbee zone wells.

Deep zone production is divided among the various companies as follows: Associated Oil Company, 10,600 barrels; General Petroleum Corporation, 54,000 barrels; Richfield Oil Company, 5600 barrels; Shell Oil Company, 7600 barrels; Standard Oil Company, 8600 barrels; the Texas Company, 44,000 barrels; Union Oil Company, 46,500 barrels; Wilshire Oil Company, 14,000 barrels, and all other companies 85,000 barrels. By adding about 25,000 barrels for the shallow production, the field total at the height of production last week will be obtained.

Some of the best completions of the week included Union Oil Company's Alexander 17, a 7800-barrel producer; the same company's Bell 41, which came in with an initial yield of 4500 barrels; Shell Oil Company's G. H. N. 14, a 4500-barrel well; George F. Getty's Mitchell 24, a 6000-barrel producer in the O'Connel zone; Bellview Oil Company's Groh's 3, 6300-barrel re-completion in the O'Connel zone; Bandini Petroleum Corporation's Off 13, completed with an initial production of 4000 barrels, and Causey and Pulliam's No. 2, a 5500-barrel well in the bottom of the O'Connell zone.

The large number of wells to be deepened on leases which have not been productive in the Buckbee and O'Connell zones has been reflected in the small number of new locations made. These old wells will be deepened as soon as conditions permit. It was largely from this group of wells that the wells now drilling in the Clarke sands were taken.

Maricopa Activity Waits For Improved Market

Taft, Calif.—A revival of drilling operations in the Maricopa Flats area is expected at the first sign of improvement in the heavy oil market. While the oil produced in the newly discovered district on and near Section 8-11-23 is not regarded as especially heavy, its gasoline content is considerably below that of the southern California crudes.

North American Consolidated's new producer on Section 11 is flowing at the rate of 3500 barrels, after coming in at a higher rate. The oil is 22.2 gravity and shows a neglible cut.

Doyle Petroleum Company's Weir 1, started flowing at the rate of 800 barrels but soon sanded up. The well is being cleaned out for a complete test.

Kettleman Curtailment Meeting Ended in Deadlock

LOS ANGELES.—Despite considerable pressure to force approval of the agreement to curtail operations at Kettleman Hills, as outlined by the special committee appointed several months ago, a rising vote failed and the special meeting of operators, permittees and others interested ended in a deadlock.

On a rising vote, a representative of one operator and a member of the special committee, Ellsworth McGowan, who represents the Kettleman Oil Corporation, stated that he could not vote in favor of permitting the three offset wells to the Milham Exploration Company's discovery well flow indefinitely if they failed to lower the pressure materially within 60 days. He pointed out that the drainage would be too heavy from other wells and that the 10 per cent allowed from the total production of the three wells would not be sufficient to offset the loss incurred by operators forced to completely shut in their wells.

Dr. George Otis Smith, representative of the Secretary of the Interior, was present at the meeting and contended that while the government was eager for a complete shutdown, it would take anything it could get. He plead for an approval of the agreement as submitted and explained several points involved.

As outlined by the agreement, all drilling activities on the following permits on the north dome would be suspended until July 31, except as provided by qualifications to be explained later: Elliott, Oschner, Armstrong, Beal, Crum, Ferguson, Helm, Maddox, Shomate and Watson.

The exceptions to this complete shutdown affects seven of the 10 permits. They follow:

First—Under the Armstrong permit any one of the four wells, Shell 1, Getty 4-1 and 6-1, and Standard 81 (10-P), may be continued to a discovery to the satisfaction of the secretary of the interior, and the others may be continued to the top of the oil sand.

Second—Under the Beal permit, Pacific Western 27 may be continued to a discovery to the satisfaction of the secretary of the interior, and the Milham 1 may be continued to the top of the oil sand, or vice versa.

Third—Under the Crum permit, Milham-Kennedy 1, may be continued to a discovery to the satisfaction of the secretary of the interior.

Fourth—Under the Ferguson permit, Bolsa Chica 1 may be continued to a discovery to the satisfaction of the secretary of the interior.

Fifth—Under the Watson permit, the Associated 1 may be continued to a discovery to the satisfaction of the secretary of the interior.

LOS ANGELES.—A last minute change by the special committee in the proposed agreement to suspend most operations at Kettleman Hills has been made to satisfy the dissenting member of the committee. It has been agreed that 15 per cent. instead of 10 per cent., as originally outlined, of the value of oil and gas produced from the three wells to offset the Milham Exploration Company's discovery well will be distributed equally among the wells which are completed and shut down. This probably will be more equitable if a severe drainage results.

It has also been agreed that the three wells will be allowed to flow a full 90 days to relieve the pressure in the discovery well before an attempt will be made to shut all producers in.

Sixth—Under the Elliott permit, Marland 2-13 may be continued to the oil sand; Marland 12-8 may be continued to completion; and Milham 2 may be continued to the oil sand.

Seventh—Under the Oschner permit, the General Petroleum wells in Sections 26 and 20 may be continued to completion.

The important provisions of the agreement follows:

"The doing of any additional work on the wells enumerated above under first to seventh during such suspension period shall be delayed beyond the expiration of such suspension period for at least the number of days such work is done on such well during the suspension period. The Elliott, Oschner and Armstrong discovery wells completed prior to the effective date of this agreement may be returned to production immediately upon expiration of such suspension period.

"And further we covenant to postpone production from the North Dome until July 1, 1931, except as provided hereunder:

"*First*: That the three offset wells to the Milham Elliott well 1, namely, Marland Oil Company well 12-8, Standard Oil Company wells 1P-8 and 11P-81 be completed and placed on production in the zone from which the Milham Elliott well 1 is producing. The pressures of these wells after they are placed on production will be recorded daily for the purpose of determining if the pressure of Milham Elliott well 1 is being affected.

"If at any time after these offset wells are placed on production, the pressure in Milham well Elliott 1 has been reduced so that it can be

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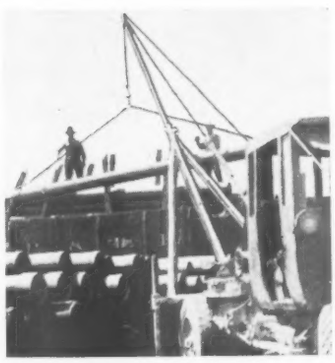

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HOBBS TRUCK EQUIPMENT Mfg. Co.
Fort Worth, Texas

killed without hazard to life and property, an effort will be made to shut the well in. If this is successfully accomplished the three offset wells will also be shut in. However, if the pressure is not materially reduced within 60 days after the offset well has been placed on production, and if any of these offset wells elect to continue to produce, then the owners of the four wells mentioned shall contribute 10 per cent of the sale value of the oil production of their wells to be distributed monthly by one of the four companies (to the later determined) to the owners of all wells in the North Dome area which have been complete as hereinafter defined, on the basis of an equal part to each of the completed wells, regardless of their distance from the three offset wells.

"A well shall be deemed to be completed when the water has been shut off above the Temblor sand and the discovery has been made to the satisfaction of the federal or state oil and gas supervisor. The contribution from the above four wells shall be considered compensation in full to the owners of completed wells in the North Dome area for keeping their completed wells shut in for the duration of this agreement.

"*Second*: It is further understood and provided under this agreement that if before July 1, 1931, a market need for new production in California develops, or any drilling of adjacent lands not covered by this agreement threatens drainage of the lands now included in the above named permits, a majority may petition the secretary of the interior to terminate this period of suspended development and of non-production.

"This deferred development and postponed production of the lands included in this agreement is undertaken at the request and on the initiative of the secretary of the interior (for the purpose of furthering the government's policy of conservation and of insuring the development of the area covered by this agreement in an orderly and economic manner), and in consideration of this compliance with his policy we jointly ask for a two years' extension of our permits, to be immediately granted when individually applied for in the manner provided under the regulations and, if in good standing otherwise, such extension to be for two years except that such permits as are now extended to some future date shall be extended for two years from such future date when applied for.

"These extensions may be conditioned upon full compliance with this agreement of suspension of operations, but shall include the right to begin and carry on operations subsequent to July 1, 1931, and in further consideration for this compliance with the conservation program of the secretary of the interior based upon the present emergency, a further extension of two years may be applied for before the expiration dates, except where a shorter period only remains before expiration of the permits.

"And further in consideration of this compliance with the government policy, the secretary of the interior offers to the holders of the permits on which active development is already in progress, the issue of all leases upon both the Elliott and Oschner permits on the basis of discovery already made; and the issue of all leases on the Armstrong, Beal, Crum, Ferguson, and Watson permits when validated by discoveries as above provided; all these leases to be conditions upon the execution of stipulations of drilling and production based upon this agreement. Also, it is understood that all assignments now pending before the secretary of the interior shall be approved immediately after completion of this agreement.

"In line with the government's policy of oil conservations, to which this agreement contributes, the parties interested in the Kettleman Hills field undertake, by the appointment of a representative committee or by other means, to consider a plan of unit development or other cooperative method of developing this great structure with a maximum of production and utilization at a minimum of operating cost; such committee to report its progress from time to time to the secretary of the interior, and when deemed opportune, the secretary will propose the necessary legislation enabling the government's participation in the proposed cooperative plan, by authorizing both the necessary acreage involved and the substitution of a fixed and definite share in the output in lieu of the existing different rates of royalty for primary and secondary leases. This agreement, however, is not contingent upon the ultimate acceptance of such a plan by the government or any other party in interest.

"For the purpose of this agreement, the area of the North Dome is:

> North by line one mile south of north line of Township 21; east and west by lines two and one-half miles distant from and parallel to a line drawn through the center of Section 33, Township 21 South, Range 17 East, and the center of Section 1, Township 23 South, Range 18 East. South by line one-half mile south of north line of Township 23.

"This agreement to suspend drilling activity and to postpone production, except as above provided, becomes effective on July—, 1929, and upon the secretary's approval of its terms shall be used in support of our several applications for extension of the permits above named, and is further subject to the confirmations of this action by such other parties in interest in these permits, whose consent is necessary.

"This agreement shall be binding upon the successor or successors in interest of the parties hereto."

Bay Region Don't Want Kettleman Controlled

San Francisco.—Some anxiety is felt here concerning the proposed plan to suspend the bulk of operations in the Kettleman Hills field, but it is believed that sufficient gas to supply the Bay region will be available, even if only a limited number of wells are completed. The discovery well is producing about 75 million cubic feet of gas daily, and a few more wells would care for the cities in this district. The line will soon be completed and gas turned into it. Present plans for the mixing of the natural gas with the artificial gas now being used so that if it becomes necessary to fall back on the artificial gas, this may be done without a complete change in burners.

400-Barrel Well Brought In At Summerland

Santa Barbara, Calif.—Lincoln Drilling Company has placed its Williams 1, discovery well in a new sand in the old Summerland field, on the pump and production is holding steady at 400 barrels. The oil is only 20 gravity but contains 20 per cent. gasoline and an equal quantity of kerosene. The well was completed at only 1250 feet and is expected to be the cause of additional drilling. Shallow production has been obtained from this field for more than 40 years, more than 200 wells having been drilled from piers in the ocean.

Union Completes Well At Santa Barbara

Santa Barbara, Calif.—Union Oil Company has entered the ranks of producers in the new Santa Barbara field, completing Mesa Community 1 as a 300-barrel well at 2178 feet. A string of 13 3/8-inch casing was cemented at 2158 feet, with tubing at 2000 feet. The oil is 18 gravity and the cleanest yet found in the field.

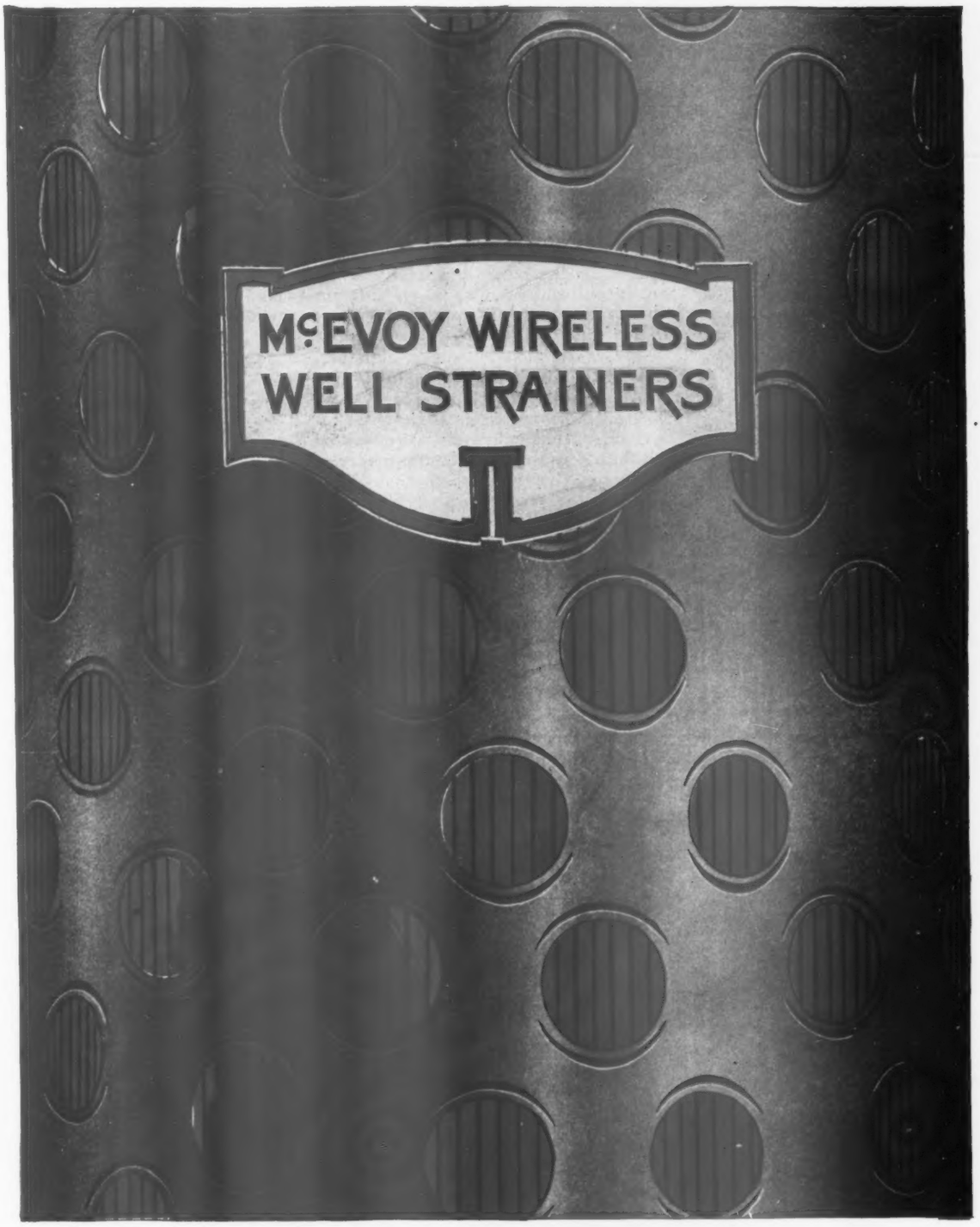
The faulted condition on the north and west flanks of the field is expected to affect production, while an unconformity on the sharp and folded structure may further limit operations. At best, a large production is not anticipated from the shallow sand.

Kern County

Bakersfield, Calif.—Western Gulf Oil Company is drilling at 7235 feet in K. C. L. 8-B, in the Fruitvale field, making the well one of the deepest tests ever drilled in Kern County. The present formation is sandy shale and streaks of medium coarse sand.

Ocean Shore Test

Los Angeles.—Ohio Oil Company has made a new location near Palisades De Rey and Venice, beaches, not being satisfied with the test recently abandoned in the district.



J. H. McEVOY
& COMPANY
HOUSTON, TEXAS, U.S.A.
Pacific Coast Branch: McEvoy Screen Pipe Co., 2428 E. 56 St., Los Angeles, Calif.

California Drilling Unabated Despite Curtailment Effort

(Continued from page 67)

the year. Time has had little effect upon this great field and it is now producing about 180,000 barrels of light oil, or within 25,000 barrels of the peak of 14 months ago. Long Beach has been quietly developed during 1929 and enough new oil has been added to offset the natural decline. About 100 wells are drilling for the deep sand and only a small decline is expected during the remainder of the year. Little gas is being wasted, and if the new state law is effective, production will suffer but little in the field. Many new locations are being made and completions will follow as a natural result.

Kettleman Hills a Menace

If government estimates prove to be correct, Kettleman Hills, if developed, will completely upset the crude oil market in California and weaken all other markets. With this in mind, tremendous pressure is being brought to bear on operators to limit operations to the present number of wells and to shut down all possible tests when the sand is reached. This plan is meeting opposition from many permittees, who are of the opinion that their permits will be jeopardized if drilling is not completed. The government believes that a large production would place a heavy strain on the light oil market and would needlessly drain reserves which may be needed later.

About 30 wells are now being drilled and the completion of most of these should result in a large production. If plans to stop drilling fail, this field may become the critical area of the state. The discovery well has demonstrated that the field is far from a "flash." The oil is mostly gasoline and one barrel is equivalent to three barrels of ordinary crude.

Santa Barbara field, which lies almost wholly within the city of Santa Barbara, will not be a disturbing element in California. The structure is faulted on the north and west and has an unconformity which is an unfavorable factor. The anticline is sharp and folded and production will be limited. The discovery well made a high percentage of water and subsequent tests which reached the sand failed to flow. The oil is heavy and is best suited for fuel oil. About 40 wells were started within a few weeks after the field was discovered, but most of these will not be completed as producers. The rush to this new field was partly precipitated by its proximity to the Elwood field and was speculative from more than one angle.

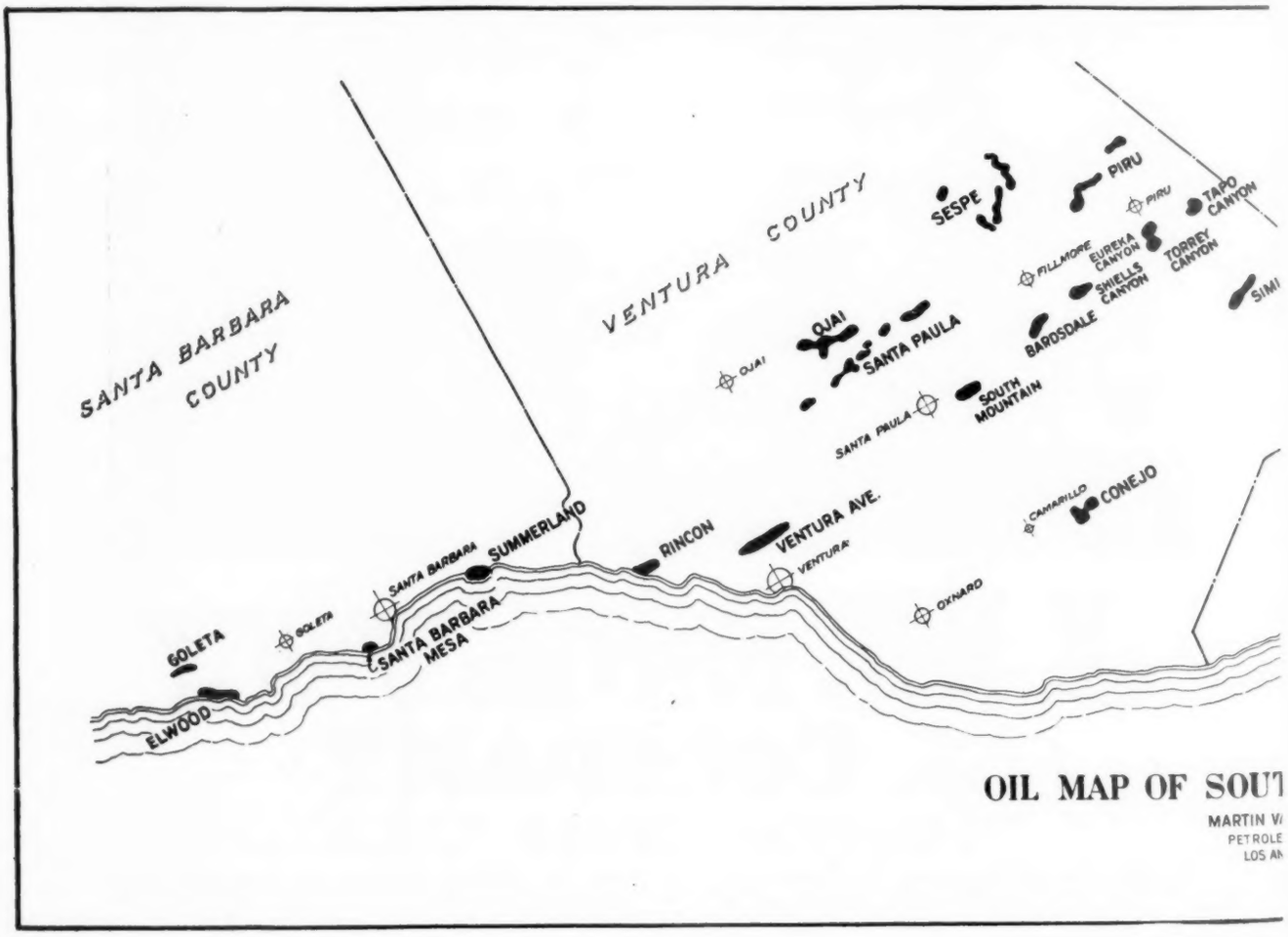
Available Deep Sands

Completion of two large wells around 3000 feet in a semi-wildcat district in the Maricopa Flats was an important development of the first six months of 1929. These wells practically prove about 1200 acres and a good production will be developed. The completions were in the extreme eastern part of the area and do not indicate deep production over the entire Midway-Sunset district. Probably a dozen wells will be drilled this year.

The rapid climb of the Seal Beach field, after a lull of nearly two years, was a feature in the Los Angeles basin. Production in the conservatively developed area jumped to almost 50,000 barrels, following the completion of a dozen large wells. This part of the field is controlled by three major companies and is not expected to cause further trouble this year.

The future of the Lawndale field, by far the greatest disappointment the Los Angeles basin has known in recent years, seems blasted and only an unexpected turn can save the operators many millions of dollars. More than 50 wells were started, following the successful completion of a 1000-barrel producer, but only two wells are now drilling in the entire area. A few small wells were completed but the initial production of all was less than one well should have been.

A revival of interest in the Summerland area, where shallow wells have been producing for 40 years, resulted in the location of several wells and the



completion of one 400-barrel producer at only 1250 feet. The shallow wells are producing on a small monocline which rises up out of the ocean and an effort is being made to find the true source of the oil.

While little is being said concerning deeper drilling in at least two fields in the Los Angeles basin, it is thought that if production drops sharply, other areas will be developed at greater depths. The Inglewood field is known to have deeper productive sands and it seems only a question of time before they will be developed. This development may not come for a year, or even more, however.

Deep tests are already under way at Huntington Beach and geologists believe that the chances are good for still deeper production.

Discovery of three fields along the Pacific coast, between Ventura and Point Concepcion, during the past two years, has been the direct cause of many wildcat locations on almost every semblance of a structure over a wide stretch in Santa Barbara County. Additional production is expected but nothing of a disturbing factor is anticipated.

Although the situation is cloudy in California, there is much hope for relief. If production can be brought to 750,000 barrels by the end of 1929, 1930 may see an adjustment which will benefit the industry. It is doubtful whether all the forces working for a reduction will be able to bring the situation completely under control within six months. In the meantime, a surplus probably will exist, and the economic conditions in the industry outside California will go a long way toward the revision of California crude prices.

California Yield to Stay Above 800,000 In 1929

That the daily average production of California will continue above 800,000 barrels throughout this year, with the possible exception of December, is the composite opinion of a number of engineers representing the major companies of the state. This opinion was arrived at by careful study, taking into consideration the possible effect of the gas conservation law, which is effective September 1, and also surmising that the present shut in production of about 130,000 barrels will continue throughout the year.

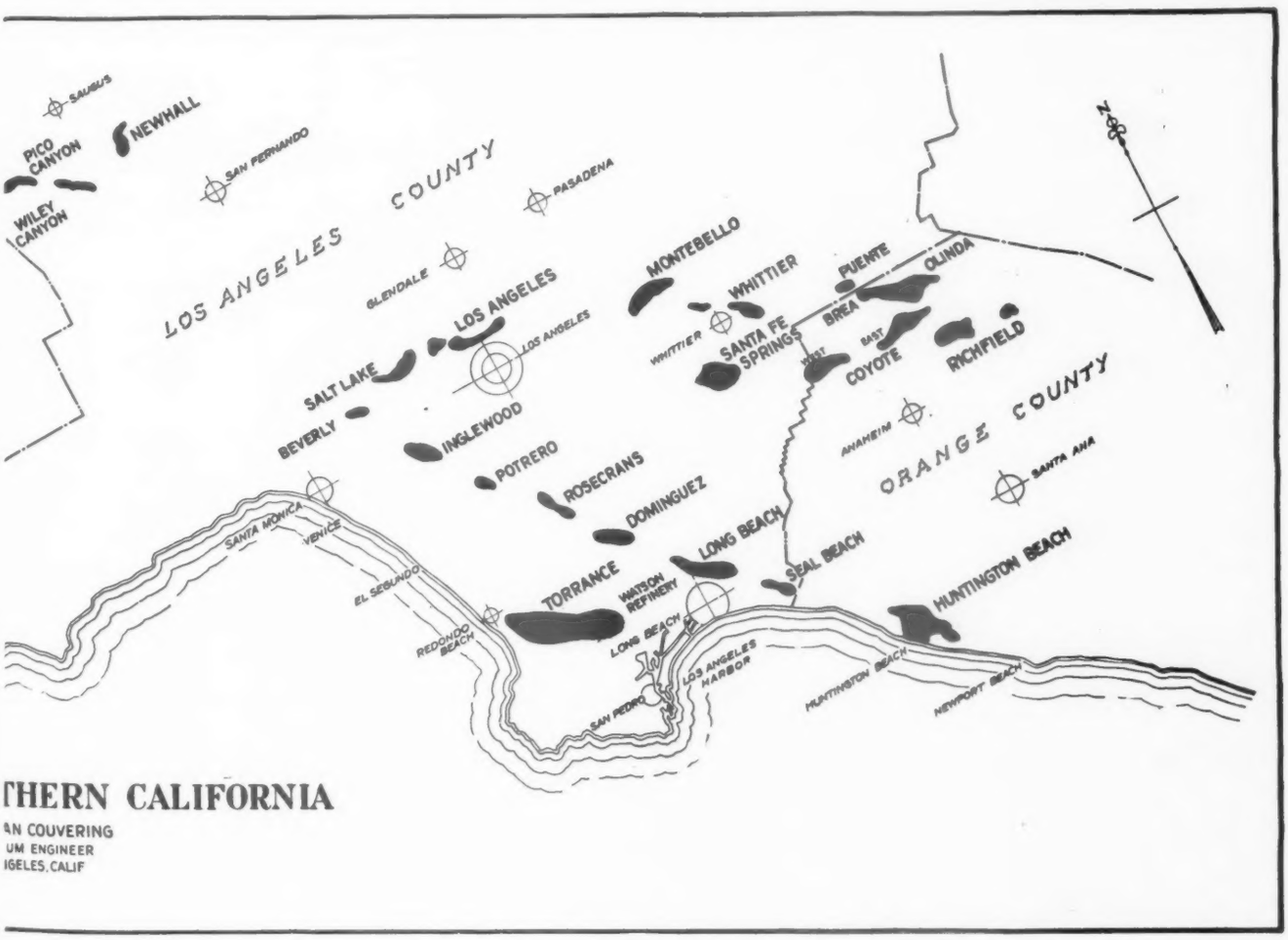
This composite estimate includes a special study of what can be expected of Santa Fe Springs for the next five months, and also allowing for the development of a fair production at Kettleman Hills by the end of the year. The composite estimate for Santa Fe Springs as an individual field and for the state as a whole, using daily average figures for each month, follows:

	Santa Fe Springs	State
August	273,240	891,570
September	246,260	687,690
October	224,100	852,090
November	195,300	822,085
December	172,100	798,400

The above estimate might be thrown out of balance if the lower Clarke sand at Santa Fe Springs should develop a larger production than expected. If there is no curtailment agreement reached at Kettleman Hills, the estimate would have to be increased. But certain engineers contend that a large production cannot be developed at Kettleman Hills by the end of the year anyway, regardless of any agreement to curtail operations. Still others contend that the production of the Lower Clarke at Santa Fe Springs might be greater than expected, but it is possible for the decline in the upper zones to be faster than figured.

Find Oil Sand

Bakersfield, Calif.—Taft Well Drilling Company has encountered oil sand and shale at 3985 feet in its Delfino 1, a wildcat test on Section 2-30-27 and about two miles west of the Union Avenue district.



THERN CALIFORNIA

AN COUVERING
UM ENGINEER
IGELES, CALIF

Thirty Million Barrels Crude Stock Increase This Year

(*Continued from page* 59)

North Texas increased from 2,144,100 barrels last year to 4,830,250 barrels this year. Salt Flat, in Southwest Texas, was easily the feature of that area during the first half of 1929. In this new area, 174 wells were completed, of which 156 were oil producers, with an initial production of 73,544 barrels. The fact that this area contributed 6,309,100 barrels of oil production during the six months period accounts for the fact that Southwest Texas showed an increase in production from 4,241,550 barrels last year to 11,844,400 barrels this year. In the Gulf Coast area, Refugio, South Liberty, Sugar Land, Raccoon Bend and Barbers Hill were the features. Activity in these areas boosted the number of well completions from 341 to 472 and the number of oil well completions to 303. Thes combined wells boosted the total initial production of this area from 116,677 barrels last year to 206,263 barrels this year. The total production of the Texas Gulf Coast increased from 19,288,850 barrels to 22,696,070 barrels.

Results Unfavorable Economically

On the whole, the results for the first half of 1929 were satisfactory so far as success in obtaining oil production were concerned, but were decidedly unfavorable from an economic standpoint. While the demand for petroleum continues to break all records, it is apparent that the industry has been and is producing too much oil on the basis of current requirements. The mere proving of a new oil producing area, instead of furnishing the nucleus for future oil supplies, has proven to be the incentive for increased activity. Consequently, there existed keen competition to drain these new-found reservoirs of oil. Thus, instead of carrying out the principles of cooperation previously agreed upon, the industry has in reality courted the conditions which now confront it. The follies of the first half of 1929 are easily designated as: 1—Over-optimism; 2—Increasing crude prices at the wrong time; 3— Lifting of proration. At any rate, prosperity has accompanied this period of overproduction and will undoubtedly remain with the industry throughout the next two months. After that, unless something unforeseen develops, prosperity will end—at least temporarily—and there will follow more time for reflection. Over the mistakes of the recent past. The outlook now indicates a gain in crude stocks of 30 million barrels. How much more or less than the figures indicated depends entirely upon natural causes and the ability of the industry as a whole to direct concerted action against the evils of overproduction. Perhaps when the crude market begins to crumble this fall, discarded proration efforts will be revived.

Active Crude Demand Encourages Oklahoma Field Work

(*Continued from page* 78)

that sent production in the above territory to 25,000 barrels daily, with Section 18 having 20,000 barrels daily from seven wells at one time. The play in Sections 13 and 24-9-5 came first and resulted in the exploring of Section 18-9-6, adjoining to the east, although that territory had been given up as unfavorable.

Seminole Wildcat Fields

The new Wilcox sand pool east of Seminole City centering around Section 18-9-7, received a number of producers with the result that its production reached over 5000 barrels daily. The field was opened by Sinclair Oil & Gas Company.

East Little River field came and went throughout the year, and several times, after it apparently was through, additional good producers were completed to revive it. Production was carried in the Little River totals, but a prolific recovery was built up. Mid-Continent Petroleum Corporation and Gypsy Oil Company both got 5000-barrel wells in the district during the year.

McCully Field

McCully field of Logan County, the state's deepest producing pool, discovered by Shell Petroleum Corporation's McCully 1, Section 30-19-4w, during June, 1927, continued to receive considerable development that improved its western and southwestern outlook, in addition to limiting the field to the north and northeast. The pool is now defined in all directions except to the west and southwest.

In June was completed the field's largest producer. Shell Petroleum Corporation's McCully 8, SE SW SE Section 30-19-4w, produced 6833 barrels in 24 hours from the Wilcox sand at 6016-37 feet. The county had a peak recovery of nearly 20,000 barrels daily during the first six months of the year.

There is due a number of important completions in the district at once that will mean much to the possible extensions to the west and southwest.

Allen Pool

Allen field, of southern Seminole County, continued to be a scene of development throughout the year. The discovery of additional Wilcox sand production greatly encouraged operators and a number of tests are now drilling in Sections 23 and 24-5-7e to the Wilcox sand. Although the Wilcox sand in this area at times showed indications of becoming important, for the most part the producers failed to hold up to their initial recovery. Thus far, none of the Wilcox sand production has indicated a market threatening pool. A number of failures in the vicinity of the Wilcox producers tended to lower the prospects of the field, but acreage owners have not given up, and the region is sure to have a thorough testing.

Deep Tests

The first six months of 1929 saw the drilling of a number of real deep holes. Included in these is the Indian Territory Illuminating Oil Company's rank wildcat in the NW Section 10-1n-11e, Coal County, Southern Oklahoma, which is around 7600 feet and still drilling. This is the deepest hole ever drilled in the state. It has few showings of importance.

The deepest producing wells ever completed in the state is the Healdton Oil & Gas Company and Fox Wood's Gragg 2, SWc Section 29-18-4w, near Crescent, in Logan County. This test made better than 100 barrels daily from 6700 feet in what was thought to be the Hunton lime. After drilling to the Wilcox sand, where it found water, it was plugged back.

Cromwell - Franklin Oil Company's Thompson 1, SWc NE Section 15-12-3w, wildcat three miles north of Oklahoma City, in Oklahoma County, was abandoned at 7178 feet. It ranked as the state's deepest test until the Indian Territory Illuminating Oil Company's Coal County wildcat passed. In addition to these three outstanding wells there were a number of other tests drilled to nearly 7000 feet and indications are that there will be a growing number to reach this depth during the remainder of 1929.

Huntington Beach Deep Test Is Disappointing

Huntington Beach, Calif.—Rex Oil Company has placed its No. 12, a deep test in this field, on production at 5063 feet, the initial yield having been only 225 barrels, gross, of which about 45 per cent. was water. The well is being pumped and is not regarded as a favorable completion. A formation shutoff was attempted in the lower Ashton and it is possible that the water was not excluded.

Richfield Oil Company is testing the shutoff in Bardeen 1, also regarded as a deep test, having plugged back to 4850 feet after cementing 9-inch casing at 4680 feet. Only the lower part of the Ashton will be included, as this part of the zone supposedly has the big "kick".

XUM

WHY?

EVERY oil man is in competition with every other oil man. Some are more successful than others. Why?

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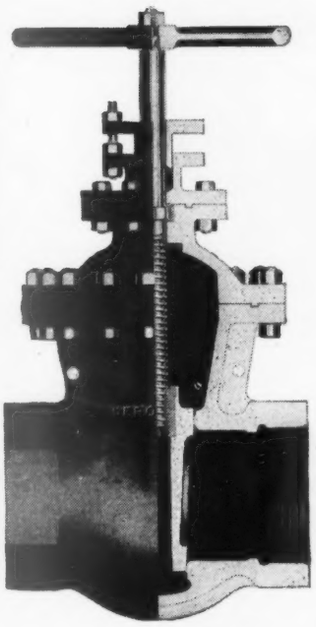

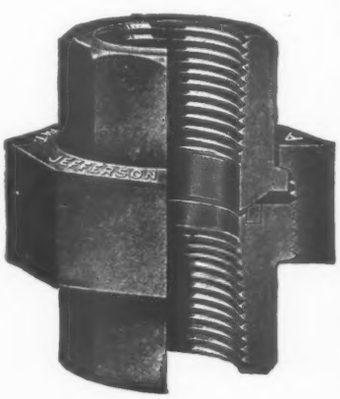

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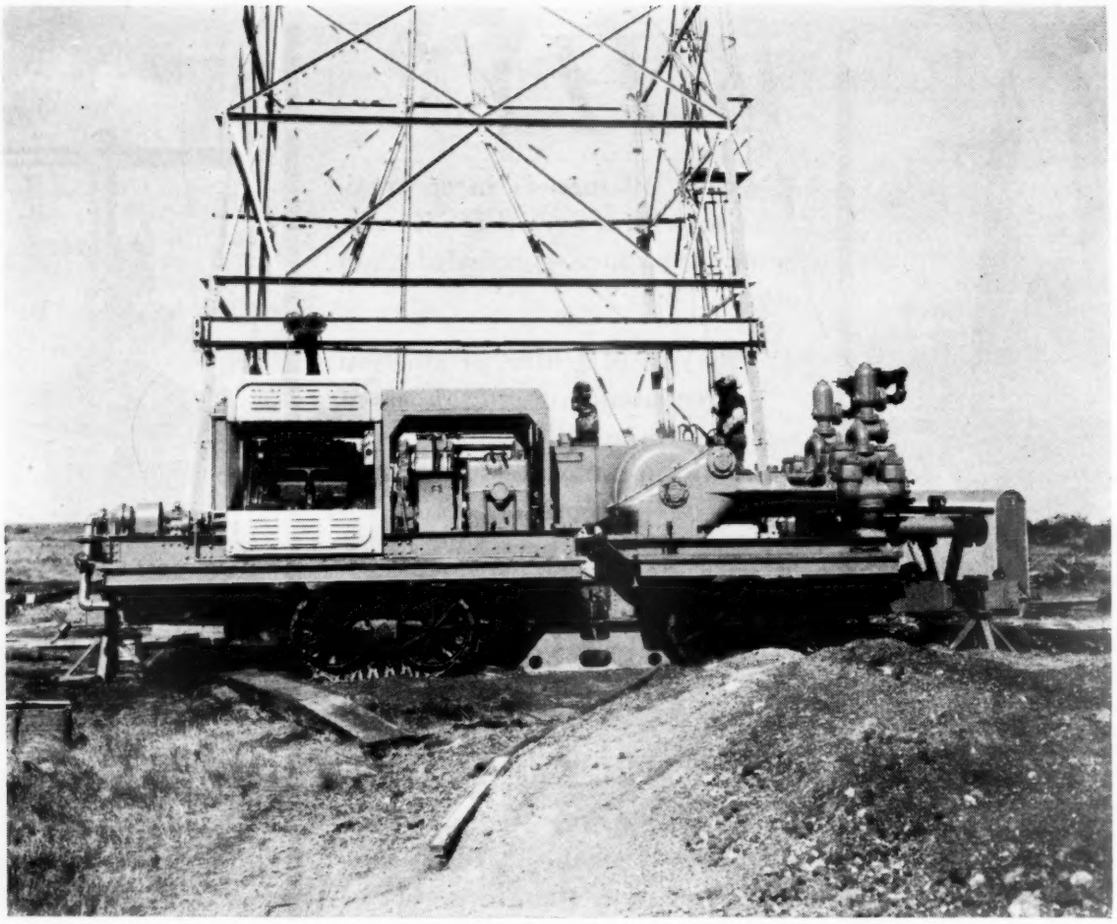
FT. WORTH SHREVEPORT



The specially assembled portable for drilling West Texas wildcats, seen ready for spudding California Company's Turner 1 wildcat in Glasscock County. Note that the trailers have been jacked up to relieve the wheels off the weight

Portable Hydraulic Equipment Used in West Texas Deep Well Work

By WALLACE DAVIS
Staff Representative

EMPLOYING the use of hydraulics in wildcat drilling is one of the numerous items making the California Company's present program of exploration in West Texas an interesting step in the progress of wildcatting. Hydraulic power used in connection with internal combustion engines driving an outfit especially designed by the operators, presents something new even to proven fields.

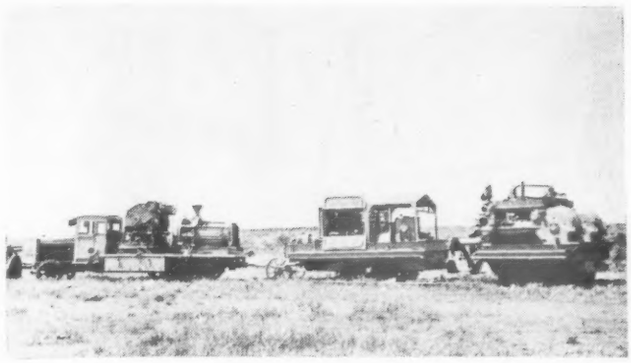
The first of a series of wildcat tests to be drilled by this company under its program was spudded in northern Glasscock County July 1, and 13 days later had reached 1050 feet. It is Turner 1, located 2310 feet south of the north line and 2310 feet west of the east line of Section 46, Block 33, T. & P. Railway Survey, Township 2 south.

The complete outfit, while weighing more than 45 tons, is portable. This includes a truck and two trailers, specially built and an integral part of the equipment. An accompanying photograph, snapped as the outlay of equipment was arriving at the location, serves to give the massiveness of the moving job—yet, with the thoroughness of construction of the outfit, moving to location is reeled off like clock-work. Dismantling the equipment, moving five to seven miles, and assembling for spudding requires only five days.

The California Company, subsidiary of Standard Oil Company of California, and a West Texas producer for three years with headquarters at Dallis, is pioneering the field with this new rig which, while made up of proven equipment, has been designed and assembled mainly by company engineers, and is in an experimental stage.

Two Engines

Two 125 horsepower gasoline four-cylinder industrial Waukesha motors, 6⅜x8, Model WK22D, are set in specially designed engines to furnish power for the rig. Each of these motors are hooked up to run any part of the rig. One engine drives the draw works and the rotary and the other runs the pumps, which are Gardner-Denver, 5¾x12. The two engines are connected immediately behind the clutches through a Texrope drive, consisting of a driven Texrope pulley fully keyed on the drill engine shaft and a second Texrope pulley idling on the pump engine shaft. The latter drives the pump



Not army tanks bound for the front—just 92,000 pounds of wildcatting equipment made portable. This shows the outfit arriving at the California Company's Glasscock County location

Showing the modern trend of wildcatting in West Texas. A 2200-gallon gasoline supply tank is mounted on the right to supply the engines. In the center background are two Parkersburg 250-barrel tanks for water storage, and on the extreme left are several joints of portable steel ditch for circulating mud

engine shaft through a dog clutch. When the drill engine is running and the pump engine idling the pumps may be started by shifting the dog clutch, thereby connecting the power between the two engine shafts through the Texrope drive. The purpose of this Texrope connection is to permit the operation of any or all of the units with either, or both, engines. Likewise, the clutch and throttle controls on the engines are arranged to operate either or both engines.

Power from the drill engine is transferred from the motor by a drive shaft into a reverse box (double sliding pinion type), which serves to reverse the direction on the rotary table or draw works drum. The draw works drum has six speeds, three of which are in the transmission box and which may be used on the rotary table. An additional three speeds, making six speeds on the drum, are obtained through a post brake that actuates planetary transmission. A lever control in the driller's corner handles the transmission box changes.

The controls at the driller's position consists of a lever bank to operate the draw works and rotate the table. A reverse lever operates the reverse box coming out of the power unit. The handling of the post brake is included in the lever bank that operates the draw works and the revolving of the table. Another lever operates the clutch on the engine, where all operations may be stopped by pulling out the engine clutch. At the driller's position also is the throttle control for regulating the speed of the motors.

Rotary Table

The hydraulic rotary table, a product of the Doheny-Stone Drill Company, is operated by a Vickers, Type 120, pump, which has a capacity of 50 gallons per minute, developing 500 pounds pressure at 1500 revolutions per minute. The hydraulic pump is direct connected at the front end of the pump engine through a Nuttall 18/10 to one, speed multiplier. There is no control on this pump, which runs all the time the pump engine is running, by-passing the fluid when the hydraulic feature of the rotary table is not being used. The hydraulic power is operated on ice machine oil instead of water, and the oil is stored in a 200-gallon tank built into the front end of the engine trailer.

A hydraulic manifold controls the hydraulic feature of the table, the manifold consisting of a four-way valve which depresses or elevates the table, and two gate valves which allow the volume of fluid to by-pass except when the hydraulic is running. Pressure can be applied either up or down by a hydraulic control lever at the driller's position. The feature of the hydraulic jack is in its performance in shallow drilling where little weight is on the drill stem. With 200 pounds pressure per square inch, 30 tons of pressure can be applied on the bit.

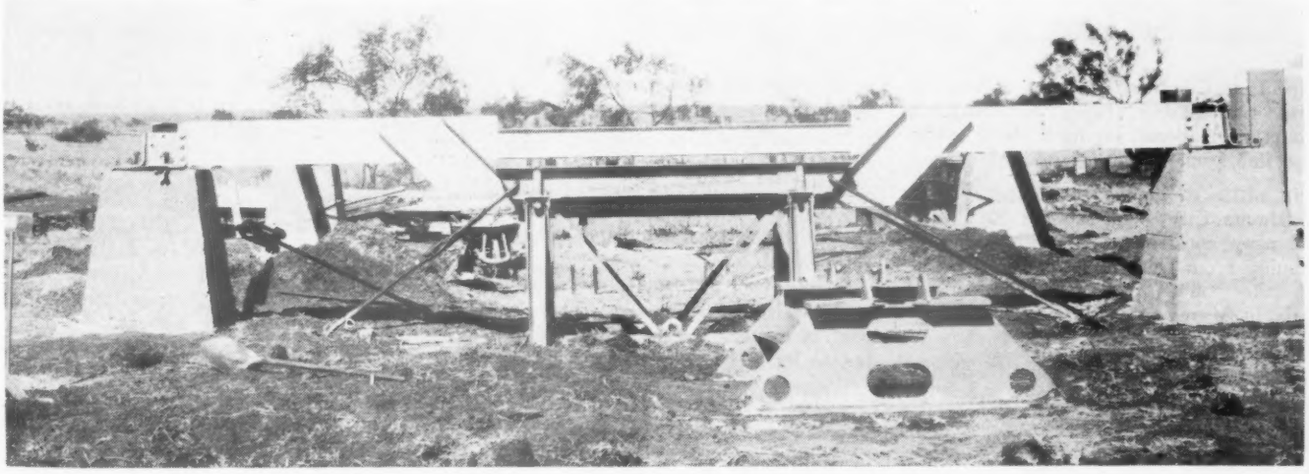
The pump engine connects with the mud pumps through a De Laval worm type reduction gear. The pumps are chain driven through sprockets and either or both pumps may be driven through the operation of the dog clutches.

The draw works is the Type 2-B, five-inch, and equipped with Timken roller bearings so that the drum runs free on its shaft. Timken tapered bearings completely equip the rotary table.

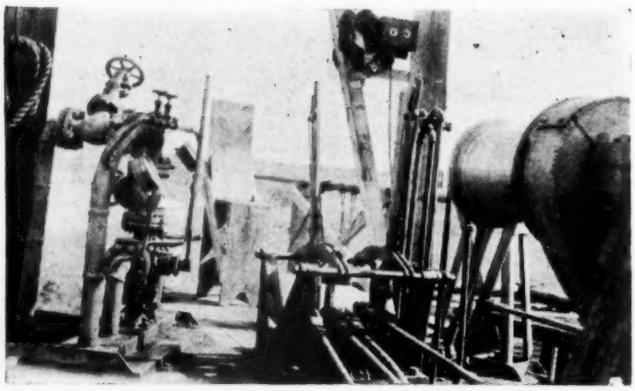
Operation of the two engines for the first 900 feet in Turner 1 wildcat required an average of one gallon of gasoline for every 1¼ feet drilled. Gasoline supply is stored in a 2200-gallon tank set up near the location. The water supply is hauled in a specially built 50-barrel tank designed to fit the truck which moves the outfit from one location to another. Two 250-barrel Parkersburg steel tanks have been set up for water storage, from which a two-inch line delivers water to the pit. On the present operation the pumps have required approximately 100 barrels of water daily.

Special Truck

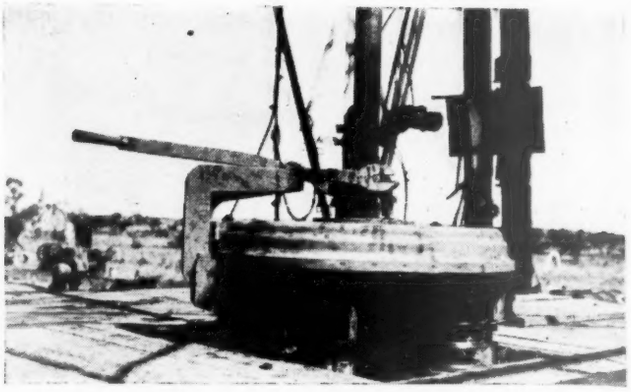
Another mark of modernity about this wildcat operation is the use of the new



A real wildcat derrick foundation, California Company's Turner. 1. Note the construction of the bottom sill to allow the draw works to slide onto its steel foundation, and the foundation in the foreground for the engines. The latter is mounted on an imbedded concrete pillar



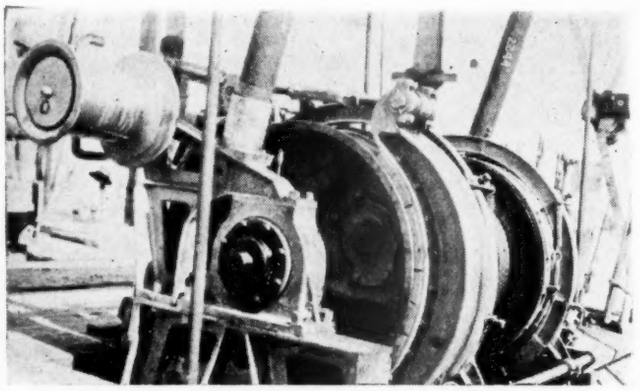
A close-up view of the lever controls with the hydraulic control feature on the left



Stone-Doheny hydraulic rotary table being raised to get a new grip on the drill stem

Harry M. Gill portable steel ditch for a mud course.

A specially built Linn truck powered with a 100 horsepower Waukesha motor delivered the equipment in a single trip to the location, and will be used to transfer the load in the future. It has four speeds forward and is geared 99½ to one in low gear. The back wheel tread is flexible and adjusts itself to the surface for complete traction. Steel supports for the draw works are built on the front of the bed, and, on moving the draw works the outfit is lifted in place over the support by a winch attached on the side of the truck. The maximum speed of the truck, loaded, is five miles per hour. Space on the truck bed is provided for the rotary table, and with this load the truck weighs 41,000 pounds. Two Athey Truss Wheel trailers accompany the truck, one hauling the two engines and the other the pumps. This equipment is permanently fixed on the two trailers. On arrival at the location the trailers are pulled over steel supports, which in turn are supported by embedded concrete foundations, jacked up, and set on the foundations, taking the weight of the equipment off the wheels.



The Doheny-Stone draw works giving six speeds

In order for the draw works to be lined up properly on its steel foundation a section of a foundation derrick sill is sawed off, two short sections of which are bolted into the remaining sections and into the draw works foundation for steady bracing. An 81-foot Emsco derrick is being used on Turder 1, and is seated on four-foot concrete pillars.

The two engine units on their trailer weigh 24,000 pounds, the pumps and trailer weigh 25,200 pounds, the draw works and skids, 14,600 pounds, and the hydraulic rotary table and wood skids complete weigh 8950 pounds. The unit, the Type 2-C, 15-inchx22-inch, has a 36-inch lift. As explained above the hydraulic feature affords a lift, when necessary, as well as a driving power.

The California Company's wildcatting program in the territory where it is now operating reveals plans to have one derrick built ahead all of the time. On completion of one location, the derrick will be up and the rig foundations ready to move on at the next location to be drilled.

Oklahoma-Kansas Transportation Materially Increased

(*Continued from page* 64)

Pipe Line Company also was one of the first into Asher field, Pottawatomie County, Oklahoma, laying a short extension line from Township 7-4e.

In order to handle the output of the Oklahoma City field, Empire Pipe Line Company constructed an eight-inch line running from Guthrie south to the field, 32 miles. This project was completed early in March and crude from the discovery well was turned into it.

Skelly Oil Company, White Eagle Oil & Refining Company and Empire Pipe Line Company reconditioned an old 12-inch water line running from Valley Center, Sedgwick County, Kansas, to Eldorado, 20 miles. The line could handle 40,000 barrels daily, but the company's portion of the output of the pool was never sufficient to fill the line.

Marland Pipe Line Company completed its line from Valley Center that tied into its trunk line running to its Ponca City, Oklahoma refinery. The line ran from Oxford to Valley Center and had a rated capacity of 8000 barrels.

Standard Oil Company of Kansas built a 60-mile six-inch line from the Sallyards pool, in western Greenwood County, Kansas, to its Neodesha, Kansas, refinery.

Western Kansas was featured by the proposed construction of gathering systems by the Phillips Petroleum Company to handle the production principally in Ellis, Rush and Russell Counties.

In addition to the above developments there were a number of smaller activities, including the construction of a tremendous amount of gathering systems. New pools in Oklahoma, with the exception of Oklahoma City, required only very short extensions to include them in the trunk systems. There were a number of new pools opened in Western Kansas, but none of them have been of sufficient size to warrant the laying of connections from the systems in Eastern Kansas.

Trunk line expansion work that has taken place in Oklahoma and Kansas during the past year promises that the territories will have sufficient outlets to take care of their production for a number of years. Refineries near the Great Lakes are assured sufficient crude to meet their demands.

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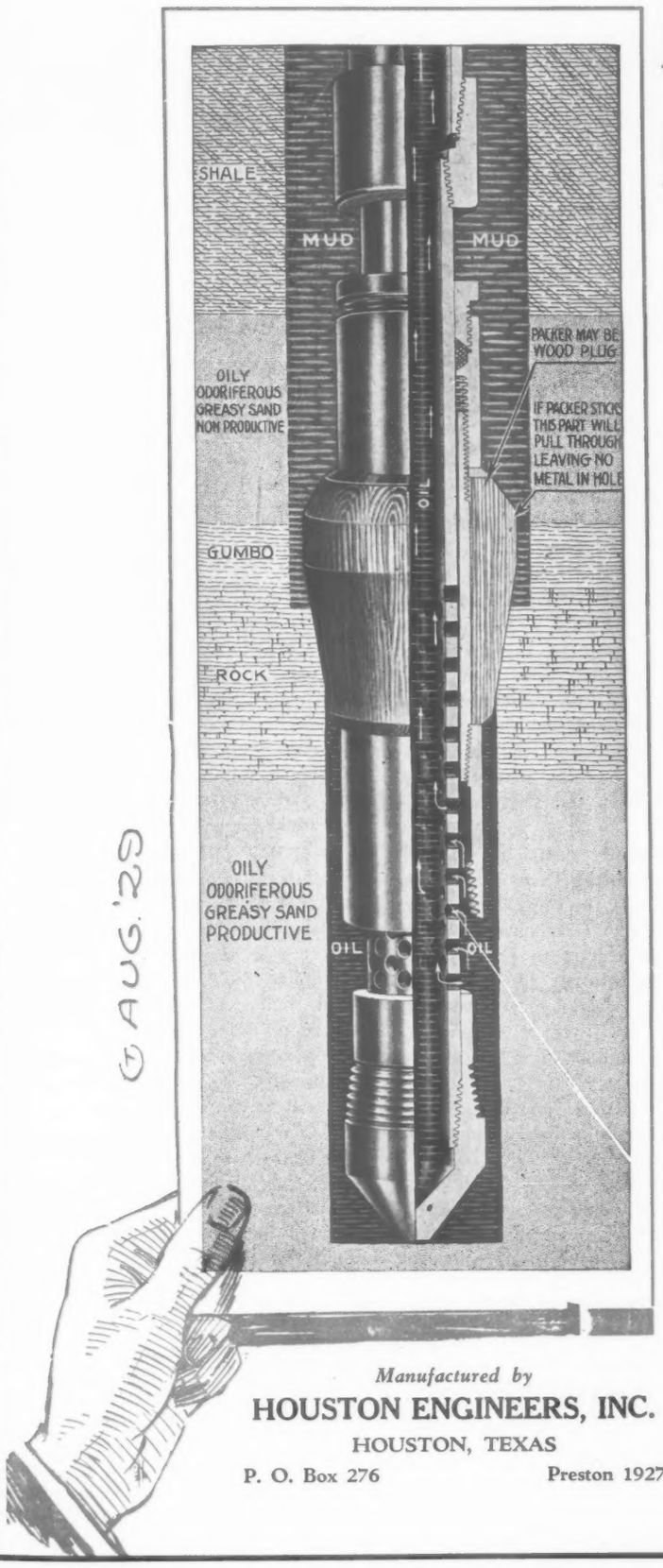

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Increase in Use of Natural Gas Rapid In South and West

(Continued from page 66)

in during the past four years, but other districts have overshadowed the field during the past few months. Buttonwillow has not been regarded as a permanent gas field by many companies, because an analysis has shown a marsh condition in some wells. A large potential production has been developed and only the operation of the field will disclose its possibilities.

The Dudley Ridge district, located in the edge of the Tulare Lake basin and a few miles southeast of the Kettleman Hills field, recently entered the list of promising gas areas, a drilling well having blown out from 3100 feet when a heavy pocket of gas was tapped. The well blew wild for two weeks, producing about 25 million cubic feet of gas daily. The proximity of the district to major gas lines under construction gives it an advantage over other semi-proven areas near the Tulare Lake basin.

Completion of a small gas well on the Carpenteria structure, where a large oil production was anticipated, gives the area a chance for a worthwhile gas production. Another well is being drilled and the outcome of this test is expected to determine whether gas or oil will predominate.

Intensive drilling of structures along the Pacific Ocean, north of Ventura and south of San Francisco, may result in the development of a large gas supply in an entirely new district. The potential supply is expected to result from both oil fields and gas producing structures, with the former predominating. Several wells have been drilled near San Francisco, but the strip apparently was outside the oil-gas belt further to the south and east.

Extensive Gas Distributing Systems Built

Texas

NATURAL gas line expansion work invaded a virgin section of Texas during the first half of 1929 when the El Paso Natural Gas Company completed a 204 mile, 16-inch trunk line from the Jal field, located in Southeastern New Mexico, to serve industrial and domestic consumers in El Paso and intermediate towns. The completion of this unit in June places natural gas into all thickly populated cities and towns in the state, and future work will be supplemental lines, or the laying of small laterals to reach the isolated towns remaining to be served.

The largest gas line project in sight for Texas is the proposed line by The Texas Company, Phillips Petroleum Company, Skelly Oil Company and Columbian Carbon Company, all joining in the formation of a new corporation that will lay a 24-inch, or larger carrier from the Texas Panhandle gas areas to Chicago and intermediate points. Should this project be carried out, it will be the largest carrier leading from or across the state. Financial arrangemtnts are reported to be practically completed.

Lone Star Gas Company, major gas distributor in North and Central Texas, continue to carry on a steady expansion program, and on July 15 started stringing pipe for the immediate construction of 135 miles of 20-inch welded line parallel to existing trunk lines from Petrolia, North Texas, to Fort Worth and Dallas. Petrolia is a junction point on the company's system where gas from the Texas Panhandle and Southern Oklahoma fileds are put into one system.

Construction work was started by the Lone Star Gas Company in April on a 24 mile 16-inch line from Desdemona station to the Sipe Springs gas area, located in Northwestern Conmanche County, with plans to later extend this unit through Rising Star and Cross Cut to tie into the company's isolated Brown-Coleman district system. In order to service a group of small towns in Central Texas, the company is at work on 50 miles of six inch and 36 miles of four-inch, that will tap its double 18-inch trunk line system in northwestern Hood County, extending south by way of Granbury, Glen Rose, Walnut Springs, Idebell, Morgan, Meridian, Clifton and Valley Mills. Separate jobs from the above include 16 miles of four-inch to serve the towns of Whitney and Howe, while work has just been completed on 31 miles of three and four-inch pipe from Gainesville station to Myra, Muenster and Saint Jo.

Southern Union Gas Company, Dallas, expanded its Winkler-Ward County system early this year with a 23 mile six-inch line from Pyote to Pecos, Texas. This concern also built lines from Raccoon Bend field, Austin County, with a 36 mile, six and four-inch line to the towns of Brenham, Somerville and Bellville, while an eight mile, four-inch carrier was built from the above field to Hempstead.

The most recently completed natural gas trunk line from the Texas Panhandle district was built by the Consolidated Gas Utilities Company of Oklahoma from the Wheeler County section to Enid, Oklahoma. This line consists of about 185 miles of 16-inch welded pipe, and was placed in operation early in November, 1928, handling 12 million cubic feet of gas daily at the start.

Magnolia Gas Company, Dallas, a subsidiary of the Magnolia Petroleum Company, started construction work several months ago on a gas line project in Southwest Texas that is expected to reach an aggregate of about 230 miles of trunk line when all units are finished. Construction forces are at work on laying 80 miles of combination 18 and 20-inch line from Mathis, San Patricio County, to the south edge of San Antonio, with 12 miles of 18-inch across the town, followed by 25 miles of 14-inch line to New Braunfels. This project is being electrically welded, using A. O. Smith Corporation's pipe, and is scheduled to begin handling gas from White Point, Refugio and Agua Dulce fields early in September.

California

CONSTRUCTION of a 200-mile gas line from the Kettleman Hills field to San Francisco, Oakland and other Bay cities is now under way and the completion of the project will benefit both the consumers of gas and the producers in one of the greatest potential reservoirs in California.

Pacific Gas & Electric Company, holders of the principal franchises in the Bay cities, is building the line, which ranges from 20 inches to 22 inches in size and has a capacity of 125 million cubic feet daily under full load. San Francisco and neighboring cities have worried along with artificial gas, and despite this handicap have grown into great industrial centers. An almost unlimited supply of natural gas is expected to give the district a much more rapid growth, through the addition of industries preferring this fuel.

From Kettleman Hills to Panoche Pass, a distance of 45 miles, 22-inch pipe will be used. From Panoche Pass to Milpitas, the line will be of 20-inch construction. At Milpitas, the line will form a "Y," one lateral leading to San Francisco, a distance of 42 miles, and another leading to Oakland and several other smaller cities, a distance of 36 miles. Both of these lines will be of 20-inch construction.

The line will have a capacity of 75 million cubic feet daily without the use of compressors. Field pressure at Kettleman Hills is great enough to deliver gas to San Francisco, but compressors will be used for safety. The cost of the 200-mile line will be about $13,000,000. The pipe will be buried to an average depth of 30 inches.

A separate unit of construction, but one which may be used in case of emergency to give San Francisco additional gas, is a 16-inch line now being built between Kettleman Hills and the Buttonwillow district, a distance of 45 miles. This line will augment the supply for the northern cities and in case Kettleman Hills gas is not developed rapidly, it will

be possible to use the dry gas from the Buttonwillow district.

The two lines will give California another trunk gas line and will complete a project which has been under consideration for several years. The Buttonwillow field did not offer the proper inducement for such a great expenditure, but the two districts should furnish gas for the Bay cities for a generation.

The Kettleman Hills-San Francisco line is about 80 per cent. completed and will be ready for a final test by September 1.

The probable potential production of the Kettleman Hills field has been responsible for an application to build large gas lines to Fresno and other San Joaquin Valley cities during the next few months. One 20-inch line will be laid from the field to a point near Fresno and smaller lines will complete the network. More than a dozen cities will benefit from the lines.

Plans are under consideration for laying a gas line from the Los Angeles Basin to San Diego, via several smaller cities. This now seems an excellent outlet for the surplus gas produced in Los Angeles Basin fields, but little of a definite nature has been accomplished toward building the line. If carried out, this project would complete an unbroken gas line between San Francisco and the Mexican border.

Oklahoma-Kansas

THERE was little or no major natural gas pipe line development in Oklahoma and Kansas during the first six months of 1929, with the exception of several lines coming from the Texas Panhandle. Foremost among such work was the Empire Gas & Fuel Company's gas line running from the Texas Panhandle northeast across the northwestern part of Oklahoma into Kansas to Wichita, thence to Kansas City, Missouri. This line is really a Texas project since its source of supply is found in that state and more detailed information on it will be found under that state's development.

Another line coming from the Texas Panhandle was laid to Enid, Oklahoma, to supply that city and other intermediate points. Other gas developments in western Oklahoma consisted of the granting of several franchises by the smaller towns for supplies from local areas or from some of the larger interstate lines running nearby.

In Kansas, Cities Service Gas Company proposes to construct lines from its main pipeline system at Atchinson, Kansas, to Falls City, Nebraska, by way of Horton and Hiawatha, Kansas. The route has been chosen and will be about 53 miles. The line will be constructed of six-inch pipe.

Cities Service Gas Company also completed work on 15 miles of welded gas lines from its main lines at Saginaw near Joplin, Missouri, to Neosho, Missouri.

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

EASTERN STATES

PENNSYLVANIA

BRADFORD FIELD—

Company, Well and Location	Initial Production Bbls.	Depth
South Penn Oil Co., Bingham 439, tr. 121	2	....
Bingham 190, tr. 83	2	....
Bingham 151, tr. 47	2	....
Bingham 439, tr. 122	5	....
Bingham 570, tr. 1	4	....
Bingham 390, tr. 10	2	....
Bingham 398, tr. 3	3	....
Bingham 395, tr. 13	2	....
Bingham 576, tr. 19	5	....
Bingham 533, tr. 112	4	....
Bingham 533, tr. 113	2	....
Smith 185	2	....
Smith 187	2	....
Smith 188	2	....
Smith 189	2	....
Melvin 292	2	....
Melvin 293	2	....
Melvin 294	2	....
Hazlewood Oil Co., Lot 23, tr. 05-012	pressure	....
Lot 3, tr. 06-07	pressure	....
Lot 3, tr. 47	2	....
Lot 3, tr. 42	2	....
Lot 3, tr. 43	2	....
Lot 3, tr. 44	2	....
Lot 3, tr. 49	2	....
Lot 3, tr. 48	2	....
Lot 23, tr. 146	2	....
Lot 23, tr. 150	2	....
Lot 23, tr. 154	2	....
Bingham 188	3	....
Associated Producers Co., Bingham 184, tr. 15	3	....
Bingham 214, tr. 22	8	....
Bingham 214, tr. 23	8	....
Bingham 568, tr. 16	12	....
Bingham 568, tr. 17	10	....
Sloan & Zook Co., Potter J-i, J-2, T-4	pressure	....
Potter 3	3	....
Williams 139	3	....
Williams 144	3	....
H. F. & C. Jack, Jack 19	5	....
Jack 20	4	....
T. H. Irvin, Jr., Kapp 14	4	....
Kapp 15	4	....
G. A. Simpson, Simpson 13	5	....
Simpson 14	5	....
Simpson 15	5	....
J. W. Kaufman, Rounds 30	20	....
Rounds 31	15	....

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This week	Completions Last week	Producers This week	Producers Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	2	2	1	1	..	..	1	1	1,140	150
California	20	15	20	15	..	..	..	..	47,938	50,178
Illinois	..	4	..	4	..	..	..	..	...	290
Indiana	6	2	1	2	..	..	5	..	25	90
Kansas	36	15	21	9	1	..	14	6	6,073	1,281
Kentucky	25	31	14	23	..	1	11	7	288	1,727
Louisiana	15	..	3	..	6	..	6	..	275	...
Michigan	10	6	9	5	..	..	1	1	2,955	3,300
New York	15	..	14	..	..	..	1	..	56	...
Ohio	47	50	21	19	15	12	11	19	388	397
Oklahoma	89	65	43	39	10	10	36	16	41,035	26,952
Pennsylvania	87	32	78	31	6	1	3	..	346	72
Texas	160	150	95	76	8	11	57	63	27,711	33,138
West Virginia	19	20	4	9	13	9	2	2	22	64
Total	531	392	314	233	59	44	148	115	128,252	117,639
Increase this week	139	..	81	..	15	..	33	..	10,613	...
Decrease this week	..	..	..	..	..	..	..	..	...	...

Company, Well and Location	Initial Production Bbls.	Depth
Schorman & Co., Chambers 1	7	....
J. A. Walters Estate, Walters 15	7	....
C. E. Potter, Russell 8	5	....
H. E. Camp Estate, Bingham 2	8	....
Roy E. Diament, Diament 12	4	....
D. W. Daly, Bingham 389, tr. 64	4	....
BUTLER COUNTY—		
Luntz & Co., Dombart 1	10	....
South Penn Oil Co., Kuhn 21	5	....
T. W. Phillips Oil & Gas Co., Burtner 4	2	....
Horton & Co., McMillan 2	¶1¼	....
Ritz, Watson & Co., Raisley 1	¶1	....
J. S. Walker, Moore 1	¶1	....
Gettman & Co., Wilson Hrs. 12	*	....
Pittsburg Oil & Gas Co., Raisley 1	*	....
R. J. Steeb & Co., Goubeard 1	*	....
VENANGO COUNTY—		
Brundred Oil Corp., Lot 82, tr. 79	2	....
Lot 82, tr. 80	2	....
Lot 82, tr. 81	2	....
R. Foggan & Co., Clark 29	25	....
M. Golstein, Goldstein 12	4	....
Goldstein 17	3	....
S. Y. Ramage, Stiles 87	2	....
Stiles 88	2	....
H. C. Graham & Co., Waid 27	4	....
W. B. Kapp & Co., Sporer 1	3	....
Snyder & Son, Fye Brothers 9	2	....
Baird & Harrison, Sankey 1	3	....
P. H. Spentsea, Brown 13	3	....
McElphatrick & Withrup, Fee 1	2	....

Company, Well and Location	Initial Production Bbls.	Depth
CENTER-MIDDLE FIELD—		
Clinger Bros. & Co., Johnson 50	12	....
Rieg & Hickey, Lot 2, tr. 15	8	....
R. L. Thomas, Dennis Run 14	4	....
Haskell & Co., McKean 27	3	....
Anderson & Co., McWilliams 1	2	....
CLARION COUNTY—		
South Penn Oil Co., Christy Hrs. 14	10	....
W. W. Wilson, Davis Hrs. 1	7	....
E. A. Bream & Co., Galey 7	4	....
Weaver & Sons, Weaver 4	¶1	....
Fryburg Motor Co., Sigworth 1	¶1	....
F. C. Deemer, Meherton 9	2	....
Meherton 10	2	....
Meherton 11	2	....
GREENE COUNTY—		
Manufacturers Light & Heat Co., Watson 1	¶2	....

INDIANA

PERRY COUNTY—		
P. E. Tichenour & Co., Welborn 1	*	....
VIGO COUNTY—		
Siosi Oil Corp., Thomas 2	25	2234
SULLIVAN COUNTY—		
McGillvay & Co., Buchamp 1	*	2468
SPENCER COUNTY		
Ohio Oil Co., Winchell 1	*	1400
B. Robinson & Co., Huff 1	*	830
Libb & Co., Arnold 1	*	300

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MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
MUSKEGON COUNTY—		
Cornelius & Brown, Young 2	1000	2030
Dixie Oil Co., Ross D-3	200	2052
Maire, Caswell & Co., Shuler Estate 5	250	2066
White River Oil Corp., McDonald 1	5	1395
Swastika O&G Co., Giles 4	300	2053
Muskegon Oil Corp., Daniloff 5	5	250
Thompson Bros., Smeltekamp 1	200	....
ISABELLE COUNTY—		
Stitgenbauer & Russell, Coon 2	700	3540
South Bend Oil Synd., McNeal 1	*	3740
MIDLAND COUNTY—		
Pure Oil Co., Sias 1	50	3582

NEW YORK

ALLEGANY COUNTY—		
Forest Oil Corp., Forest (10 Wells)	pressure	....
Richmond Oil Co. & Co., Fee 10	2	....
Fee 11	2	....
Fee 12	2	....
Fee 13	2	....
Karl-Weller Oil Corp., Karl 6	2	....
Karl 7	2	....
Karl 8	2	....
N. V. V. Franchot, Franchot 9	15	....
Dermitt & Gilligan, Fee 18	7	....
M. J. Crowley & Co., Crowley 13	7	....
Colegrove Oil Co., Fee 19	4	....
C. M. Dunning & Co., Fee 1	3	....
C. M. Dunning & Co., Fee 2	3	....
L. W. Shaner & Co., Fee 9	3	....
C. H. Lavans & Co., Fee 3	*	....
A-G-A Oil Corp., Fee 5	pressure	....

WEST VIRGINIA

WETZEL COUNTY—		
Hope Natural Gas Co., Miller 2	5	....
Myers O&G Co., Myers 1	5	....
Burley & Orensoff, Pyles 1	2	....
Pure Oil Co., Cole 3	¶1½	....
CALHOUN COUNTY—		
Austin Garretson, Betts 1	¶1¼	....
C. B. Lewis, Hathaway 1	10	....
F. F. McIntosh, Hays 1	¶1½	....
ROANE COUNTY—		
United Fuel Gas Co., Thompson 3592	¶2	....
Hill 2928	¶2	....
Grow & Dicker, Kendell 1	¶¼	....
KANAWHA COUNTY—		
United Fuel Gas Co., Unknown 2450	¶¼	....
Herrick 1	¶¼	....
Lewis Hrs. 2596	¶¼	....
PLEASANTS COUNTY—		
Delong Farm Oil Co., Delong 9	*	....
Frank Knox & Co., Westbrook 1	*	....
DODDRIDGE COUNTY—		
Trainer Bros. & Co., Bates 1	¶¼	....
MONONGALIA COUNTY—		
Carnegie Natural Gas Co. Stephens 2	¶2	....
MARSHALL COUNTY—		
Manufacturers Light & Heat Co., Fry 3	¶2	....
GILMER COUNTY—		
Carnegie Natural Gas Co., Rymer 1	¶¼	....

KENTUCKY

ALLEN COUNTY—		
Tracey Supply Co., Morrison 10	*	352
OHIO COUNTY—		
Daley & Lowman, Bryant 1	*	....
Hewlett 1	*	....
Wittmer O&G Co., Smith 1	*	....
Woodward Oil Co., Moseley 1	*	....
Wood Oil Co., Ferguson 1	*	....
Smith 11	30	....
Mitchell 6	15	....
Dundee O&G Co., Thomas 3	15	....
Thomas 4	12	....
C. E. Daugherty & Co., Hewlett 3	2	....
DAVIESS COUNTY—		
Wood Oil Co., Sands 4	8	....
Sands 5	5	....
Ohio Oil Co., Moseley 1	*	....
Westerfield 1	*	....
Eastern Gulf Oil Co., Ruby 8	40	....
Murray 9	20	....
L. C. Young & Co., Park 3	*	....
Shelton 1	*	....
May 1	*	....
Park 5	20	....
The Petroleum Co., Burns 16	55	....
Penn-Indiana Oil Co., First National Bank 5	35	....
Goldburg, Young & Co., Purcell 4	25	....
Cumberland Pet. Co., Jackson 2	*	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
WASHINGTON COUNTY—		
Meister & Blair, Fee 5	5	....
Parson-McSweeney Oil Co., Mendenhall 4	4	....
Deans Fork Oil & Gas Co., King 10	¶¼	1130
McVey & Knowlton Oil Co., Myers 6	2	1692
MORGAN COUNTY—		
Henderson Oil Co., McAvoy 5	15	1204
Woodyard Bros., Hollowell 3	1	308
Ohio Fuel Gas Co., Pierce 1	¶½	1623
MONROE COUNTY—		
Hope Cons. & Ref. Co., Knowlton Hrs. 11	90	1540
Martin-Yester & Co., Carr-Sulsberger 16	*	1470
NOBLE COUNTY—		
Lebanon Oil & Gas Co., Parks 4	1	1250
Local Oil Co., Bryan 8	*	369

CENTRAL OHIO

ASHLAND COUNTY—		
Ohio Fuel Gas Co., Armstrong 1	*	....
Kemrow Co., Hess 1	*	....
B. Slagel, Metcalf 2	3	715
Davis & Co., Chesrown 1	50	588
W. J. Smith, Obrecht 2	*	742
PERRY COUNTY—		
Ohio Fuel Gas Co., Miller 1	*	2886
Crowley, Carr & Co., Brunnage 1	¶1¼	3501
Kachelmacher Est. Hemlock Coal 3	20	3700
Pure Oil Co., Baker 3	25	3649
McIntyre & Guthrie, Cannon 1	¶¼	3573
HOCKING COUNTY—		
Ohio Fuel Gas Co., Paxton 1	¶2	2079
Gordon Oil Co., Goodwin 1	16	2954
Griffith 4	*	2951
Poole O&G Co., Benning 1	5	....
JACKSON COUNTY—		
Ohio Fuel Gas Co., Branton 1	*	2857
Shook & Co. 1	*	2400
Penn Ohio Gas Co., Evans 6	¶½	2570
LICKING COUNTY—		
Hope Construction & Ref. Co., Bannon 3	50	3068
Settles Oil Co., Smith 2	1	600
MEIGS COUNTY—		
Southern Ohio Gas Co., Cross Estate 3	4	1704
H. W. Taggart & Co., Rowley 3	¶¾	322
ATHENS COUNTY—		
Ohio Fuel Gas Co., Fleming 3	¶1	692
Linscott 2	¶¼	865
COSHOCTON COUNTY—		
Bell Bros. Mizer 2	*	785
Ohio Fuel Gas Co., Corry 1	¶¾	....
GUERNSEY COUNTY—		
Blackstone &Co., Alloway 4	68	3503
MEDINA COUNTY—		
Glen Fetter & Co., Fetter 1	¶¼	2900
WAYNE COUNTY—		
Harmon & George, Wenger 1	¶1	3114
SUMMITT COUNTY—		
F. A. Brendall & Co., Renninger 1	¶4¼	4125
TRUMBULL COUNTY—		
John Arthur, Rush 1	¶½	4107
LORAIN COUNTY—		
Ohio Fuel Gas Co., Roling 1	*	....
KNOX COUNTY—		
Schenker Bros. Spohn 1	*	2472

NORTHWESTERN OHIO

HANCOCK COUNTY—		
L. Cramer, Fry 3	15	1380
Watts & Harmon, Eathern 1	¶¼	....
MERCER COUNTY—		
S. W. Houser, Houser 1	5	1206
SANDUSKY COUNTY—		
Cessna, Feasel & Co., Betts 2	5	1314
ALLEN COUNTY—		
A. Spencer & Co., Hiltmer 4	3	1249

KANSAS

BUTLER COUNTY—		
Maxwell, Maxwell 1, sw ne 31-24-4e	25	2704
Leonard Pet. Co., Kinney 6, ne sw se 29-26-5e	25	2718
Empire, Hutchinson "B" 7, se nw ne 27-27-5e	310	2769
Rosenthal et al, Marshall 4, se ne nw 10-27-6e	75	3112
H. B. Garden, Sluse "B" 4, cwl ne nw 6-27-6e	35	2759

Company, Well and Location	Initial Production Bbls.	Depth
CHASE COUNTY—		
Selby Oil & Gas, Schambaugh 7, se ne 35-22-9e	20	2493
COWLEY COUNTY—		
Krow White, McErwin 1, c se sw 4-32-5e	¶½	700
Marland et al, Fee 1, sw ne 8-31-8e	*	3128
Foster et al, Fee 1, nw 36-34-3e	*	2100
GREENWOOD COUNTY—		
Empire, Merton "A" 2, ne nw ne 22-22-12e	45	1793
Phillips, McCray 1, se ne 9-22-10e	*	2465
Transcontinental, Pixlee 5, c nw ne 10-22-10e	*	2323
RENO COUNTY—		
Perry et al, Oswald 1, ne se 30-22-5w	*	4072
SEDGEWICK COUNTY—		
Hartman and Skaer et al, Hutchinson 1, se sw 23-28-3w	*	4235
Brandenburg and Hinkle, Whiting 1, nw sw 31-25-1e	*	3475
J. R. Robertson, Stewart 1, ne nw sw 29-25-1e	*	3635
Magnolia, Wise 1, nw 36-28-2w	*	3890
Hartman and Skaer et al, Campbell 1, nw sw se 21-28-1e	*	3540
Blankenship and Washoma, Tuttle 1, sw nw 1-27-1e	*	3410
Shell, Community 1, se nw se sw 15-26-2e	720	2924
Plains, Townlot 1, se nw se sw, 15-26-2e	400	2930
Bu Vi Bar, et al, Bright "B" 5, sw 6-26-1e	525	3468
Shell, Nolan 1, sw nw 21-28-1e	160	3105
G. P. Dickey et al, Nolan 1, se ne 20-28-1e	250	3100
Bu Vi Bar et al, Reed 1, se 1-26-1w	950	3378
Latz 2, se 12-26-1w	18	3370
Carr 5, nw se 1-26-1w	1100	3355
Patton and Wentz, Swenson 1, nw ne 6-26-2e	190	3010
Bu Vi Bar et al, Shawver 7, nw 7-26-1e	760	3365
Miles 1, ne sw sw ne 7-26-1e	95	3377
Marland, Black 1, sw se nw 16-25-1e	200	3012
SUMNER COUNTY—		
Marland, Spence 2, se ne ne 27-34-2e	100	3518
Champlin, Love 2, owdd, ne nw sw 9-30-2w	70	3045
De Forrest Oil Co., Frantz 3, c nw ne 35-30-2w	*	3105
HARVEY COUNTY—		
Patton et al, Horse 1, se sw ne 18-24-2e	*	3506

OKLAHOMA

CARTER COUNTY—		
Magnolia, Hefner 7, se sw sw, 33-1s-3w	30	4085
Hanson 3, se ne nw, 12-1s-4w	130	3446
COTTON COUNTY—		
Lawton, Sanders 2, se nw 3-2s-10w	¶1	2265
Moore et al, Chambers 3, nw se se nw 2-2s-10w	40	2178
Silurian, Chambers 2, sw ne nw 2-2s-10w	35	2152
CREEK COUNTY—		
Magnolia, Vance 1, se se ne 7-18-7e	*	2946
Carter, Durant 8, sw se ne ne 18-16-9e	440	3017
Selby, Durant 5, nw ne se ne 18-16-9e	915	3028
Jackson & Wise, Taylor 1, se nw 3-17-10e	¶2½	1016
Magnolia, Messellman 26, ne sw se, 8-18-7e	20	2673
Magnolia, Coker 35, nw 16-18-7e	10	2549
R. O. Bailey et al, Walker 4, nw sw sw 21-18-9e	60	2640
Wallace et al's Brown 1a, se 27-18-9e	15	2765
Alwood & Gilpin, Calvin 1, ne sw se 31-18-11e	¶2½	1687
GARFIELD COUNTY—		
Marland, Whipple 2, sw se sw 19-23-3w	¶7	5045
GRADY COUNTY—		
Meridian Gas, Ridley 1, c s½ se 25-4n-8w	¶6	2263
HUGHES COUNTY—		
Harris & Hays, Grayson 1, c sw sw 18-9-10e	*	3347
Yarnell Drlg. Co., Scott 1, sw ne 15-9-10e	*	2827
Westheimer & Daube, Wade 10, nw sw se 19-5-8e	*	4355

Company, Well and Location	Initial Production Bbls.	Depth
JEFFERSON COUNTY—		
Gypsy et al, Nesmith 1, sw ne se 2-7s-7w	*	1940
KIOWA COUNTY—		
E. M. Boring, Suren 1, se nw se ne 22-7n-17w	*	2350
Cummings et al, Prough 2, se ne se sw 18-6n-16w	*	495
J. M. Ruhl, Ditmar 1, nw ne se 19-6n-16w	*	720
MUSKOGEE COUNTY—		
Bryan, Simmons 3, c nw sw 3-15-15e	*	1673
Beu & Hill, Jackson 1a, se nw se 9-15-15e	*	1801
Traders, Howard 1a, cwl ne nw 29-15-16e	*	1283
Bryan, Barnett 5, owdd, cwl se ne 8-15-15e	20	1629
R. B. Rose, Howard 10, se ne ne ne 30-15-16e	225	1216
J. L. Slusher, Nash 1, cnl nw sw, 20-15-20e	*	775
OKFUSKEE COUNTY—		
Magnolia, Tiger 1, nw ne 25-11-10e	*	3225
Barnsdall, Soweka 1, ne sw 29-12-7e	*	4855
Minnehoma, Grayson 1, ne nw se 31-11-11e	185	3034
OKLAHOMA COUNTY—		
Mid-Kansas Oil & Gas, Fortson 2, c nw ne 24-11-3w	6735	6449
OKMULGEE COUNTY—		
B. Morgan, Fisher 1, se sw 12-11-13e	¶½	1259
Mechlin & Berlin, Colbert 8, cel se ne 14-14-14e	30	1080
OSAGE COUNTY—		
Wrightsman Pet. 1, se nw 13-26-7e	*	2828
Mid-Continent 1, nw se 24-20-10e	15	2215
Clnit Moore Estate et al 2, owdd, sw nw ne 16-21-9e	8	2326
Silurian, 55, sw ne nw 17-23-12e	50	1542
Peters and Producers & Refiners 2, sw se nw 11-26-8e	7	1798
Peters et al, 11, ne sw nw 17-26-6e	10	2976
Peters and Producers & Refiners 2, nw ne 27-27-11e	55	1655
PAWNEE COUNTY—		
John Byrne, Edminston 4, ne nw nw 31-21-9e	10	1134
PONTOTOC COUNTY—		
LaSalle, Hatcher 1, nw se 28-5-5e	*	2471
Empire, Norris 1, sw se nw 19-5-5e	640	2382
Homaokla, Ritchie 3, c n½ se 1-4-7e	¶2	2037
POTTAWATOMIE COUNTY—		
Simms, Hatley 1, sw 17-6-4e	*	4123
Simms, and T. B. Slick, Alexander 1, se 18-6-4e	*	4115
Independent, Lynn 1, se nw nw 20-6-4e	*	3975
Mid-Continent, Causey 1, nw sw sw 20-6-4e	*	2821
T. B. Slick, Bledsoe 3, nw sw 20-6-4e	*	4108
Bledsoe 4, ne sw nw 20-6-4e	*	3940
Gypsy, Blandin 2, nw ne 31-7-5e	*	4434
McCullough & Carter, McDowell 1, nw se sw 28-6-4e	*	4091
Slick (T. B.) et al, Welden 3, sw se nw nw 20-6-4e	45	3765
Independent and Twin State, Gardiner 1, ne sw se 19-6-4e	254	3840
Magnolia, Latimer 2, sw nw 17-7-4e	600	4183
Gypsy, Green 1, nw se 17-7-4e	475	4146
Independent, Borrows 2, nw 1-7-4e	2230	4088
Gypsy, Rosmand 4, nw ne 26-7-4e	100	4214
Martin and Erwin et al, Kelly 2, ne 2-7-4e	3255	3803
Wilcox, Smith 5, se nw se 8-8-5e	180	4068
SEMINOLE COUNTY—		
Mid-Continent, Smith 8, se sw ne 5-7-7e	5000	4248
Sinclair, Phillips 1, nw ne se, 5-7-7e	3810	4413
Sinclair, Davis "A" 3, sw se 7-6-8e	2950	4200
The Texas, Lucy 10, ne se se 18-5-8e	605	2598
Sinclair, Jefferson 2, ne se 23-5-7e	620	4193
Coody 1, nw ne sw 17-9-7e	525	3530
Davis "A" 4, se nw se 7-6-8e	1360	4207
Gypsy, Harjo 1, nw se 18-9-7e	350	4260
Magnolia, Anderson 2, se sw ne 18-9-6e	6400	4370
Fee 3, se nw ne 11-8-5e	666	4304
Gypsy, Cotcha 15, ne sw sw 23-7-6e	¶25	3108
Cotcha 16, (twin) se nw sw 23-7-6e	¶32	3127
Pure Oil Co., Brinson 4, ne nw sw 24-7-6e	¶51	3149
Empire, Cotcha 5, se ne 27-7-6e	100	3115
Cosden, Anderson 3, se nw sw 13-9-5e	1825	4225
Harris et al, Miller 1, nw ne 8-8-8e	*	4098
Indian Territory Illuminating et al, Factor 1, sw ne se 3-5-7e	*	4778
McCullouch et al, Hollis 1, se nw 16-10-6e	*	4618
Empire and Marland, Anderson 3, nw se sw 13-9-5e	*	4206
J. S. Cosden, Anderson 2, nw sw 13-9-5e	*	4265
Magnolia, Wood 1, se 28-7-6e	*	3360
McCullouch, Powell 1, nw 11-6-5e	*	4552
The Texas, Fleet 1, se 15-5-7e	*	4616
Sunray and Cal Cul, Joanna 2, sw nw sw 24-5-7e	*	4450
STEPHENS COUNTY—		
Four-in-One, Funk 1, sw se sw 19-1n-8w	*	2301
WAGONER COUNTY—		
Perry and Hartman, Bruner 1a, cel sw se 19-17-16e	*	1090
Frigel and Barth, Henry 3, ne sw 29-18-15e	*	1248

TEXAS

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Brown & United Prod. Co., Taylor 5	60	1490
Continental Oil Co., Falls County 2	5	1104
Richardson 7-B	25	1130
Continental & Bridwell Oil Co., Logan 3	15	1151
Estacado Oil Co., Prideaux 4	*	695
J. H. Freeman et al, Henning 6	20	1438
P. F. Gwynn & Boyd Drlg. Co., Thompson 4	170	1592
Gwynn-Boyd & Archer Drlg. Co., Oil Investment Co. 2	90	1591
Humble-Fain-McGaha, Logan 10-B	25	1125
Chancellor 1	*	1554
Frank Hutcheson et al, Fee 1	*	1462
Johnson et al, Matthews 1	*	1465
Madden & Junker, Schlagel 1	*	1305
Perkins & Cullum, Wilson 10	15	1260
Rogers et al, Garvey 1	*	826
W. H. Smith, Jr., et al, Prideaux 5	6	753
United & Petroleum Prod. Co., Wilson 1-J	25	1615
Wise & Jackson, Inman 1	*	750
BURKBURNETT—		
American Ref. Properties, Morgan 6	60	1576
Magnolia Pet. Co., Bertha Ramming 6	5	772
T. F. Hunter et al, Friberg 1	*	1600
COOKE COUNTY—		
Comet Pet. Co., Huey 1	*	1637
Humble O&R Co., Fields-Bowers 1	*	2001
ELECTRA—		
Fain-McGaha Oil Corp., Chas. Pettit 1	*	2250
Golding-Cochran, Waggoner Bros. 5	20	1313
T. F. Hunter et al, Waggoner Bros. 4-C	50	1318
J. G. Rowe et al, Waggoner Bros. 4	40	1325
The Texas Co., Waggoner Bros. 6	240	1293
Waggoner 8	360	1295
FOARD COUNTY—		
Baas-Dillard et al, Phillips 1	*	2627
HASKELL COUNTY—		
Edmiston et al, Reynolds 1	*	2030
JACK COUNTY—		
Prairie, Bryson 5	¶5-90	3122
KMA AND IOWA PARK—		
Arkansas Nat'l Gas Corp., K&K 17	60	1498
King Royalty Co., Boyd 5	45	1790
Riner & Bailey, Michie 5-B	25	1797
THROCKMORTON COUNTY—		
Shappell Oil Co., Uphsur County 2	20	1269
WILBARGER COUNTY—		
L. G. Bradstreet et al, Waggoner 1-C	180	2385
Consolidated Oil Co., Waggoner 4-0	130	1877
Waggoner 6-0	350	1879
Dixie Oil Co., Waggoner 1	110	2395
Empire G&F Co., Waggoner 15-B	115	2319
Fain-McGaha, Waggoner 4-Y	*	460
W. T. Knight et al, Waggoner 2-F	100	1882
Phillips Pet. Co., Waggoner 4-U	85	1898
Prairie O&G Co., Waggoner 9-B	*	2440
Robertson et al, Waggoner 4-F	75	1900
Simms Oil Co., Waggoner 10	*	1871
Simpson-Fell Oil Co., Waggoner 1-A	215	2665
Staley-Wynne & Co., Waggoner 5-G	350	2317
Waggoner 7-G	30	1862
Waggoner 8-G	200	1856
Waggoner Ref. Co., Waggoner 3-J	175	1885
YOUNG COUNTY—		
C. W. Boller et al, Hunt 1	†	710
L. G. Bradstreet & Brihill, Self 1	*	775
Hawkins et al, Owen 3	*	751
Parks et al, Carpenter 2	110	600
Republic Prod. Co., Haygood 3	*	752
Trinity Oil Co., Loftin 1	*	632

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Delmar Oil Co., J. L. Noel 4	550	3239
Morris et al, Barnard 1	10	3388
GRAY COUNTY—		
Continental Oil Co., Finley-Brown 3	525	2902
Danciger O&R Co., Morse 4	45	2554
Magnolia Pet. Co., Bowers 5	200	3010
Scott Drlg. Co. et al, Chapman 1	75	2753
Wilcox O&G Co., Coombs-Worley 7	*	3015
HUTCHINSON COUNTY—		
Phillips Pet. Co., Sanford-Glass 1	¶12-35	2767
Prairie O&G Co., Cal Merchant 2	¶50	2885
WHEELER COUNTY—		
Northern Texas Utilities Co., Gooch 3	¶28	1387

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Baker Bros. et al, White 2	*	1180
Central Texas Ref. Co., Bull 2	15	1151
Sinclair O&G Co., Caldwell 1	*	1665
Ven-Mex Oil Co., Hickman 24	25	1255
CALLAHAN COUNTY—		
Humphreys Bros., Gorey 8	8	421
McLeary-Conway et al, Walker 1	*	432
Warren & Hayes, Biggerstaff 1	*	700
COMANCHE COUNTY—		
T P Coal & Oil Co., L. C. Echols 1	*	2902
COLEMAN COUNTY—		
Broderick & Calvert, Bennett 1	*	1865
Brown et al, Turner 1	¶4½	1586
J. R. Foster et al, Haas 3	40	1499
Mid-West Explo. Co., Keeney 1	¶3¼-670	2012
S. C. Wilmott et al, Vaughan 1	*	1133
EASTLAND COUNTY—		
Brannon & Murray, Adams 1	¶1¼	1278
Crabb-McNeil & Canyon O&G Co., Turner 3	35	1328
Goodwin et al, Parker 3	*	1735
Porter Dev. Co., Morgan 1	*	1523
Texwa Oil Co. & Kirk, Palmer 1	30	1335
Turner 2	20	1323
ERATH COUNTY—		
Fletcher & Moore, Cage-Mulloy 1	¶5¾	3270
Shaw et al, Cox 1	¶2½	3565
SHACKELFORD COUNTY—		
Cranfill-Reynolds Co. Flippen 2-G	*	872
Gilman & McMurray, Matthews 4	*	666
Grisham-Hunter Corp., Davis 2	*	1921
Humble O&R Co., Davis 5-B	*	1850

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HOWARD COUNTY—		
Moody Corp. (Superior), Roberts 15-E	125	1433
Roberts 18-E	50	1415
JONES COUNTY—		
Grisham-Hunter Corp., Tiner 2	*	2543
Phillips Pet. Co., Pomroy 4	20	2503
REAGAN COUNTY—		
Big Lake Oil Co., University 162	5	3113
University 165	290	2891
WARD COUNTY—		
Gulf Prod. Co., G. W. O'Brien 5	130	2855
WINKLER COUNTY—		
Southern Crude & Westbrook, Hendrick 33-M-T-88	4400	2760
Hendrick 6-N-T-88	95	2860
Hendrick 3-R-T-88	400	2830

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
CADDO PARISH—		
Ray-Dawes Drlg. Co., Hunter 1, 8-19-14	*	2502
Standard Oil Co., Henderson 2, 8-19-14	25	2407
DE SOTO PARISH—		
D. Thomason, Nabors 1 6-12-11	*	1406
LA SALLE PARISH—		
O. W. Clark, Tullos 7, 23-10-1e	50	1505
OUACHITA PARISH—		
LaDel Prod. Co., Fee 48, 31-20-5	¶12	2196
Mack & Pipes Burke 1, 7-18-5	¶1	2236
Magnolia Pet. Co., Central Bank 1 1-19-4	*	185
RICHLAND PARISH—		
Hope Prod. Co., Standard Oil Co. of La. 1, 28-17-6	¶51	2450
Palmer Corp., Hardwick 1, 16-17-6	¶49	2449
Palmer Corp., Whitten 1, 21-17-6	¶½	2486
UNION PARISH—		
Imperial Oil & Gas Products Co., Fee 1-2, 30-20-4	¶8	2134
WINN PARISH—		
Gardner, Harter & Brown, Harper 12, 26-10-1e	200	1497

(Continued on page 187)

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

State—	Week ending July 20	Previous Week	Total this Month	Total this Year	This Week 1928	This Month 1928	1928 Year Total
Arkansas	2	9	17	86	9	37	331
California	24	18	61	765	18	69	1,207
Louisiana	10	28	58	474	9	29	680
Kansas	30	34	96	591	28	62	1,032
Oklahoma	118	134	354	1,881	68	249	3,744
Texas	161	191	546	4,793	171	512	8,297
Total	345	414	1,132	8,590	303	958	15,291

LOUISIANA

BOSSIER PARISH—Palmer Corp., Shreveport, A. W. Roos 1, 23-17n-12w, 660 ft s and 660 ft w of nec nw.

CADDO PARISH—Ohio Oil Co., Shreveport, S. S. Hunter Est., Inc. 5, 17-19n-14w, 330 ft n and 330 ft w of se c ne nw. Lehr A. Warren, Shreveport, L. D. Irvins 1, 33-22n-15w, 200 ft s and 200 ft w of center of sec.

CLAIBORNE PARISH — G. G. Nesbitt, Shreveport, A. W. Moseley 1, 29-20n-5w, 330 ft s and 330 ft e of nw c of sec.

LAFOURCHE PARISH — Texas-Gulf Sulphur Co., Thibodaux, Mrs. W. H. Stark et al 14 (amended permit), 72-15s-15e, 1884 ft s and 48 ft w of ne c sec. Texas-Gulf Sulphur Co., Thibodaux, Mrs. W. H. Stark et al 18, 71-15s-15e, 2050 ft s and 1600 ft w of ne c of sec.

LA SALLE PARISH — Tunica Pet. Co., Shreveport, L. & A. Oil Co. 49, 17-17n-2e, 600 ft s and 300 ft w of ne c se.

MOREHOUSE PARISH — J. S. Herkness, Bastrop, Bowles 8, 18-20n-5e, 660 ft s and 660 ft e of nw c ne.

OUACHITA PARISH — John Potts, Tr., Monroe, Potts 3, 7-18n-4e, 452 ft n and 345 ft e of nw c of sec 47 in sec 7. Pipes & Mack, Monroe, Slagle-Johnson 1, 48-18n-4e, 1294 ft n and 309 ft w of nw c of sec 47 in sec 48.

RICHLAND PARISH—W. C. Feazel, Monroe, Pardue 2 (amended permit), 6-15n-6e, 2551 ft s and 4485 ft w of nec. Palmer Corp., Shreveport, A. P. Miles 2, 12-17n-6e, 723 ft e and 660 ft s of nw c ne.

CALIFORNIA

BELRIDGE—The Ohio Oil Co. 28, 30-28-21.

COALINGA—Pet. Securities Co., Gatchell 1, 28-20-16.

FRESNO COUNTY—Shell Oil Co., Boston Land Co. E, 6-20-18. Boston Land Co. F, 11-20-18. Boston Land Co. G, 15-19-18.

HUNTINGTON BEACH—Standard Oil Co., Thomson 10, 12-6-11. V. R. G. Wilbur Twinning 1, 2-6-11.

LONG BEACH—J. H. Cochran, Cochran 5, 19-4-12. Dabney-Johnston Oil Corp. 41, 24-4-13. 44, 24-4-13; A. T. Jergins Synd. 7, 13-4-13. Dabney-Johnston Oil Corp. 45, 19-4-12.

LOS ANGELES COUNTY — L. Morgan, West Sing 1, 16-1-11.

MT. POSO—Union Oil Co., S. & M. 4, 4-27-28.

RICHFIELD—Continental Oil Co., Lypps 1, 33-3-9.

RINCON—Peneral Pet. Corp., Ferguson 1, 7-3-24.

SANTA FE SPRINGS—General Pet. Corp., S. F. 143, 5-3-11. The Texas Co., Foix 7, 6-3-11. Standard Oil Co., South Whittier Comm. 22, 5-3-11; Walker Comm. 21, 6-3-11. Universal Cons. Oil Co., Blanchard 12, 6-3-11; Blanchard 13, 6-3-11. Wilshire Annex Oil Co., Koontz 5-A, 6-3-11. Wilshire Oil Co., Inc., Wilshire-Cecelia 2, 6-3-11. Ethyl Oil Co. 8, 5-3-11.

SUMMERLAND—Geo. F. Getty, Inc., Becker Fee 1, 21-4-26.

VENTURA—Associated Oil Co., Lloyd 125, 23-3-23.

OKLAHOMA

BECKHAM COUNTY — Martin and Kay, Martin 1, c n½, 32-8n-24w.

COTTON COUNTY—C. A. Everts, McAlester 1, nw ne 14-2s-10w. Silurian, Chambers 7, se nw nw 2-2s-10w. Moore et al, Cobb 2, nw sw sw ne 2-2s-10w.

CREEK COUNTY—Shaffer, Knight 1, ne 16-15-8e, owdd. Curtis, Sewell 1, ne se ne, 27-16-10e. Magnolia, Tiger 3, sw nw se, 17-17-7e. Skelly et al, Goodman 1, sw 23-17-9e. Thompson and Black, Wilson 4, (twin), nw sw, 16-17-11e. Beal and Plumb, Walker 2, se ne nw, 26-18-9e. H. U. Bartlett, Parks 1, se nw nw, 30-18-9e. E. H. Short et al, Asbury "B" 1, ne sw, 1-19-8e.

GRADY COUNTY—Oklahoma Gas Utilities, Farwell 15, c sw nw, 26-5n-8w.

GRANT COUNTY—J. V. Bailey et al, Brewer 1, c sw se, 20-27-5w. Sinclair et al, Dickerson 1, sw nw ne, 36-28-3w.

HUGHES COUNTY — Furhman Petroleum, Buck 3, c se sw, 21-9-10e.

JEFFERSON COUNTY—Monahan and Porter, Paddock 1, cnl nw ne, 35-5s-7w.

KIOWA COUNTY — Cooper and Terhune, Ditmar 2, se ne nw ne 19-6n-16w.

LINCOLN COUNTY — Blackwell Oil and Gas, McKeown 1, ne sw sw, 27-17-4e.

MUSKOGEE COUNTY — Sioux, Martin 1, nw se, 21-11-19e. Babcock Brothers, Barnett 6, sw nw ne, 8-15-15e. E. A. Hutchinson, Grayson 1, sw ne nw, 13-15-15e. E. Price et al, Howard 2a, sw nw nw nw, 29-15-16e. R. B. Rose, Howard 11, ne se ne ne, 30-15-16e.

NOBLE COUNTY—Magnolia, Young 1, ne nw nw, 22-21-2w.

OKFUSKEE COUNTY—Minnehoma, Grayson 2, nw se 31-11-11e. Mid-Continent, Dindy "C" 2, sw se e, 31-11-11e. McMahon and Carey, Foster 2, nw ne ne, 33-12-10e. Superior Carolina 1, se, 6-11-7e.

OKLAHOMA COUNTY—T. B. Slick, Martin 1, c nw nw, 13-13-1w. Mid-Kanass Oil & Gas, Fortson 4, ne nw ne, 24-11-3w. Mid-Kansas O&G, Fortson 3, nw ne 24-11-3w. Indian Territory Illuminating, Fortson 1, nw ne ne, 24-11-3w. Coline, Olds 4, ne nw, 24-11-3w. T. B. Slick, Glidden 2, se sw se, 13-11-3w. T. B. Slick, Glidden 1, sw se, 13-11-3w. Indian Territory Illuminating, and Foster Pet., Wheeler 1, sw nw se, 13-11-3w. I. T. I. O. Co., Verne 2, ne sw se, 13-11-3w; Verne 1, nw sw se, 13-11-3w. I. T. I. O. Co., Trosper 3, se sw, 13-11-3w; Thomas 2, se, 13-11-3w; Thomas 1, sw se se, 13-11-3w. Cromwell, I. T. I. O. and Wirt Franklin, Trosper 1, se sw ne, 13-11-3w. Shell Pet. et al, Petty 3, ne, 30-11-2w. I. T. I. O. Co., Foster Pet., and Cromwell, Farley 1, nw, 19-11-2w. Coline, Wafren 1, sw, 18-11-2w.

OKMULGEE COUNTY — Nicholson Corp., McIntosh 3, ne, 14-11-13e.

OSAGE COUNTY—Fisher et al, Pinkstaff 2, nw se, 16-21-7e. White Eagle 1, sw ne sw, 28-21-11e. Ray Branstetter et al 1a, se sw, 23-23-10e. I. T. I. O. Co., 259, se nw nw, 36-23-10e. Peters 7, csl nw, 32-24-9e. Peters and Producers and Refiners 3, sw nw 11-26-8e. Peters and Producers & Refiners 2, ne se sw, 22-27-11e. I. T. I. O. 411, se nw nw, 1-28-10e. Jennings 1, nw sw 32-29-12e.

PAWNEE COUNTY—Martin et al, Cotton 5, nw ne sw, 6-20-6e Swift et al, Smeltzer 4, se nw, 35-20-9e. Capitol Hill, Green 1a, ne se, 25-21-8e.

POTTAWATOMIE COUNTY — Magnolia and Pierce, Hubanks 3, nw ne nw, 17-7-4e. Magnolia, Lynn 1, nw ne ne, 21-7-4e. Gypsy, Green 4, ne nw se, 17-7-4e. Magnolia, Hilton 1, nw 22-7-4e. Shell, Hines 1, ne sw nw, 22-7-4e. Simms, Townlot 1, nw ne ne nw, 19-6-4e. Gypsy, Blackbird 1, nw se ne nw, 19-6-4e. McCullough et al, Luckett 1, ne nw 28-10-5e.

SEMINOLE COUNTY—Gypsy, Payne 6, ne se ne, 5-7-7e. Marland and Shaffer, Harris 4, sw nw sw, 4-7-7e. Sinclair, Phillips 5, se ne se, 5-7-7e. Mid-Continent, Yarhola 1, ne se ne, 8-7-7. Indian Territory Illuminating, Fleet 1, ne sw, 13-6-7e. Shell, Holatka 4, ne se, 7-6-8e. Shell, Holatka 3, se ne se, 7-6-8e. Blackwell, Hall 1, sw, 5-6-8e. I. T. I. O., Patten 1, nw ne ne, 18-6-8e; Fleet 2, ne nw se, 13-6-7e; Holatka 3, ne se se, 7-6-8e; Holatka 2, sw se se, 7-6-8e; Davis 1, sw nw sw, 8-6-8e. Carter, Aldridge 1, se sw ne, 7-6-8e. I. T. I. O., Tiger 1, ne se nw, 13-617e. Carter, Aldridge 2, sw ne, 7-6-8e. Signal, Bond 2, nw sw ne, 13-6-7e. Signal, Bond 3, ne sw ne, 13-6-7e. Signal, Bond 4, se sw ne, 13-6-7e. Pure, Bates 1, sw nw ne, 13-6-7e. Pure, Bates 2, sw se ne, 13-6-7e. Kingwood, Price 1, se nw, 13-6-7e. Independent and Margay, Holatka 1, sw se ne, 7-6-8e. Blackwell Vanbuskirk 1, se nw, 76-6-8e. Gypsy, Peters 2, ne se ne, 23-5-7e. Gypsy, Peters 3, sw se ne, 23-5-7e. Sinclair, Joanna 2, sw nw, 24-5-7e. Sinclair, Joanna 3, nw sw nw, 24-5-7e. Sinclair, Jefferson 3, sw ne se, 23-5-7e. Sinclair, Jefferson 4, se nw se, 23-5-7e. Sinclair, Jefferson 5, nw ne se, 23-5-7e. Amerada, Marks 1, sw ne, 32-10-6e. Barnsdall, Noble 3, se nw sw, 18-9-6e. Barnsdall, Noble 4, nw se sw, 18-9-6e. Gypsy and Devonian, Payne 6, se ne se, 18-9-6e. Burke Greis, Templeton 1, nw sw sw, 17-9-6e. Carter, Wisner 1, sw ne, 16-9-6e. Magnolia, Anderson 11, sw ne sw, 18-9-6e. Magnolia, Anderson 10, se ne sw, 18-9-6e. Amerada, Sullivan 2, nw sw nw, 17-9-6e. Amerada and Gypsy, Conner 1, sw nw sw, 20-7-6. Shell, Hotulka 5, sw ne nw, 23-7-6e. Magnolia, Reed 6, (twin), se ne, 22-7-6e. Pure, Cotcha 11, (twin), ne, 23-7-6e. Texas, Hotulka 7, (twin), ne sw nw, 23-7-6e. Gypsy, Nevins 1, se, 31-10-6e. Carter, Davis 2, se sw, 7-6-8e. Carter et al, Phillips 2, ne nw, 18-6-8e. Sinclair, Davis "A" 8, se sw se, 7-6-8e.

STEPHENS COUNTY — Beaver, Funk 2, csl n½ ne nw, 30-1n-8w. Pace et al, McMasters 7, se nw se ne, 13-2s-8w. Pace et al, Woodward 1, ne se ne ne, 14-2s-8w.

TULSA COUNTY—Operators Oil Co., Leverette 1, c sw, 4-19-11e. White Eagle, Page 1, se sw ne, 2-19-11e.

WAGONER COUNTY — C. F. Finefield, Vann 7, c w½ ne sw, 28-16-19e. Creekmore et al, Tiger 11, csl nw sw, 21-18-16e.

KANSAS

CHASE COUNTY—Chris Sheedy, Hugh "B" 1, ne se, 24-21-9e.

CHAUTAUQUA COUNTY — E. B. Miller, Wiggam 3, nw se se, 33-32-10e. E. B. Miller, Wiggim 2, se, 33-32-10e.

COWLEY COUNTY—Roth and Faurot, McErwin 1, sw se, 7-32-e5. The Texas, Eastman 15, ne sw ne, 6-31-6e.

ELK COUNTY—Denton et al, Elsten 3, se nw nw, 15-31-10e.

ELLIS COUNTY — Thomas and Moncrief, Strailey 1, nw se 9-13-19w. Phillips, Johnson 2, se sw ne, 9-13-19w. Phillips, Barjo 1, se nw, 9-13-19w.

HARVEY COUNTY—Lee Payne et al, Ady 1, ne nw se, 16-24-1e. Superior, Rigier 1, se nw, 11-22-3w.

KINGMAN COUNTY—D. P. Fleeger, Rayl 1, se ne se sw, 16-27-7w.

McPHERSON COUNTY—Mid-Kansas, Kuns 1, c se sw, 11-20-5w. The Texas, Munn 1, nw ne, 12-20-2w.

RUSSELL COUNTY—The Prairie and T. B. Slick et al, Mary Sellens 1, ne sw, 36-15-13w. Pryor and Lockhart et al, Sellens 1, nw se, 36-15-13w. Empire, Ochs 1, se ne ne, 23-15 14w.

SEDGEWICK COUNTY—White Eagle et al, Robbins 2, se ne se, 20-28-1e. Davis et al, Kin-

XUM

[THE FIRST OF A SERIES OF EIGHT AD-ITORIALS ON OIL]

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THE OIL INDUSTRY is one of the oldest among men. It was thousands of years old before America was discovered.

There are records of the use of oil for heat and light by the ancient peoples of Asia Minor, Persia, and China. The first permanent inhabitants of the Euphrates River used bitumen to repair leaks in boats and dug-out canoes. It was also used to hold together the stones of Nebuchadnezzar's palace. Georgius Agricola mentions the mixing of animal grease with petroleum to temper its viscosity.

George Washington was among the earliest Americans to learn of petroleum and its value. In 1753 he explored the very area where the first oil well in America was brought in a century later. There he found springs, the waters of which were covered by a thick scum of petroleum. There he learned of the use of petroleum by the Indians for the purposes of heat and light. He was so impressed with its value and usefulness that he later became the owner of an area of rich oil lands which he accounted among his most valuable possessions.

Although oil was known for many centuries as a valuable product, it remained for the genius of the people of the United States to discover quantity producing sources and bring about modern methods of producing it . . . thus making petroleum a New Industrial Giant.

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caid 1, ne, 14-27-1e. Plains et al, Curry 1, se sw sw, 2-27-1w. John Rogers et al, Stollie 1, ses nw se sw, 15-26-2e. Davis and Skelly, Wilson 12, nw se ne, 1-26-1w. Bu Vi Bar et al, Shawver 9, sw ne nw, 7-26-1e. Bu Vi Bar et al, Wright 7, nw ne se, 12-26-1w.

SUMNER COUNTY—Davis and Harreld et al, McEowen 1, se, 33-34-2e. Shell, Armstrong 1, ne, 12-33-1e. Blackwell et al, Clift 1, se nw, 26-33-3w. Champlin, Love 4, se nw sw, 9-30-2w. Champlin, Murray 1, nw se, 9-30-2w. Washoma et al, Bussard "B" 3, cel ne sw, 36-31-2e.

TEXAS

ARCHER COUNTY — Rathke Oil Co., Wichita Falls, A. Parrish, 30, 2 S 2, S. P. Ry sur, 150 ft from s and e lines. C. B. Long, Wichita Falls, L. H. Farber, 185, 4, W. C. Winters sur, 1448 ft from s and 1151 ft from w line of sur. E. B. Madden, Olney, A. H. M. Anderson, 100, 1, B 8, BBB&C sur 12, 60 ft from n and 210 ft from e line. J. H. Freeman, Wichita Falls, Hennig, 60, 6, B 21, G. P. Meade sur, 300 ft w of No. 2. Magnolia, Dallas, W. H. Portwood, 80, 1, 2411, TE&L sur, 150 ft from n and e lines. F. P. Cullum, Wichita Falls, Falls County, 100, 1, B 17, F.C. S.L. sur, 200 ft from w and 150 ft from s line B 17. Petroleum Prod. Co., Wichita Falls, A. M. Kunkel, 40, 6B, S 3, BBB&C sur, 300 ft w of No. 5; 7B, same sur, 300 ft w of No. 1. T. T. Richardson, 66, 1, L 11, J. Scott sur, 450 ft from e and 1245 ft from s line. United Prod. Co., Wichita Falls, W. H. Taylor, 20, 5, B 11, Amer. Trib. sur, 300 ft n of No. 3. Johnson & Fraser, Wichita Falls, T. A. Matthews, 60, 1, J. Ostane sur, 150 ft from n and e lines. Fresno Oil Co. & Gifford, Wichita Falls, H. O. Prideaux, 130, 24, J. Dorsey sur, 300 ft w of No. 21. Underwood Drilling Co., Wichita Falls, M. P. Andrews, 60, 1, 1805, TE&L sur, 150 ft from s and e lines. Kemrow Co., Electra, J. W. Campbell, 65, 1, B 1, D.C. S.L. sur, 150 ft from w and 250 ft from s line. Archer Drilling Co. & Gwynn, Wichita Falls, Oil Inv. Co., 20, 2, B 20, Amer. Trib. sur, 300 ft s No. 1 in lot 15. Fain-McGaha Oil Corp., Wichita Falls, Cranfill & Gwynn, 160, 1, R. Rodemeyer sur, 150 ft from w and 1320 ft from s line. W. H. Hammon, Wichita Falls, J. M. Hawley, A 80, 1, S 2, S. P. Ry. sur, 150 ft from w and 1170 ft from n line. Continental Oil Co., Wichita Falls, F. C. S. L., 50, 2, B 16, F. C. S. L. sur, 200 ft from s and e lines. C. C. Williams, Jean, E. P. Bounds, 1, BBB&C sur, 750 ft from n and 150 ft from w line.

BROWN COUNTY—Lloyd Oil Corp., Fort Worth, J. R. Collier, 190, 21, S 139, W. A. Smith sur, 300 ft s of No. 2. L. J. Stanley, 292, 18, S 139, W. A. Smith sur, 300 ft w of No. 15. Texas Co., Wichita Falls, W. S. Johnson, 80, 3, M. B. Nix sur, 150 ft from s and e lines of survey. Mac T. Anderson, Rising Star, A. Leatherwood, 147, 6, J. Delgado sur, 400 ft n of No. 2.

BASTROP COUNTY—Humble, Houston, B. Haywood, B 109, 1a, S. Wolfenbarger sur, 1750 ft from nw and 150 ft from ne line.

BEXAR COUNTY — Indian Creek Oil & Gas Co., San Antonio, W. Wolfschold, 184, 1, S 6, B 7, F. Hernandez sur. A. R. Garrett, San Antonio, P. Pena, 29, 1, No. 4, Merrick sur, 200 ft from e and 250 ft from s line.

BORDEN COUNTY—Teas & Wheeler, Colorado, E. Long, 640, 1, S 27, B 30, Twp. 5N, center of ne¼.

CALLAHAN COUNTY—C. L. McCleary et al, Baird, J. T. Walker, 40, 1, S 32, D&D Asy. sur, 450 ft from w and 270 ft from s line. A. J. Breman, Cisco, Biggerstaff, 160, 2, S 310, B 5, S. P. Ry. sur, 150 ft from e and 450 ft from s line sw¼ of sw ¼. Texas Co., Wichita Falls, P. G. Hatchett, 40, B5, S 23, D&D Asy. sur, 332 ft from w and 410 ft from s line ne¼ of ne¼. P. G. Hatchett, 40, C8, S 24, D&D Asy. sur, 666 ft from n and 442 ft from w line sw¼ nw¼; G7, same sur, 703 ft from e and 434 ft from s line sw¼ of nw¼. L. J. Cook et al, Putnam, Fee, 30, 1, S 1, J. Smith sur, 450 ft from w and 150 ft from s line. Ewmo Oil Corp. et al, Abilene, S. Smith, 80, 1, S 121, GH&H sur, 495 ft from n and 200 ft from e line n½ of nw¼.

COLEMAN COUNTY—Independent O. & G. Co., Midland, J. Morris, 1200, 1, S 712, T. B. Frizzell sur, 1102 ft from n and 330 ft from w line sec. Stepp & Keister, Coleman, J. B. Morris, 80, 1, No. 505, R. Collard sur, 150 ft from s and e lines. Taylor Link Oil Co., San Angelo, G. O. Williamson, 181, 1, S 105, E. T. Ry. sur, 150 ft from s and e lines of nw¼. White Eagle O. & R. Co., Abilene, J. P. Morris, 107, 2, No. 722, Em. Webber sur, 498 ft s of No. 1; 5, same sur, 400 ft w of No. 1. T. M. Weatherred, Brownwood, M. Dalton, 90, 2, S 156, W. D. Slaton sur, 150 ft from n and e lnes. Eastland Oil Co., Fort Worth, J. P. Morris, 10A, No. 722, Wm. Webber sur, 150 ft from s and e lines of N Blk 24. Fox & Adams, Burkett, W. T. Burns, 920, 51, No. 168, A. Wickson sur, 450 ft from n and 150 ft from e line. Dozier, Humphreys Bros., Inc., Brownwood, T. A. Sears, 100, 2, S 243, B 10, C. Shanks sur, 575 ft from w and 150 ft from n line. J. McAdams, 48, 1, No. 224, H. Frazier sur, 788 ft from w and 150 ft from s line. Continental Oil Co., Wichita Falls, M. T. Overall, 1520, 13, No. 701, J. H. Barclay sur, 483 ft s of No. 10. Bury, Atlantic & Peacock Oil Co., Brownwood, J. M. Moneyhum, 200, 1, S 10, B 1, GH&H sur, 200 ft from s and w lines. Midwest Exploration Co., Amarillo, I. Kinney, 126, 3, No. 269, R. Cochran sur, 450 ft s of No. 1.

CALDWELL COUNTY—Magnolia, Dallas, M. Merriwether, 50, 1, A. Floyd sur, 450 ft from nw and 150 ft from ne line. Humble, Houston, C. F. Dye, 40, 4, J. Hinds sur, 492 ft from s and 765 ft from w line. F. Gray, A 83, 6, J. Hinds sur, 525 ft from s and 820 ft from w line. T. A. Tiller, 40, 6, J. Hinds sur, 450 ft from n and e lines. Nash, Windfohr & Perry, Austin, W. F. Davis, 30, C3, A. Floyd sur, 280 ft e of No. 1; C4, same sur, 375 ft s of No. 3. Texas Co., Houston, Merriwether, 100, 10, A. Floyd sur, 300 ft sw of No. 7.

CHAMBERS COUNTY—Yount-Lee Oil Co., Beaumont, Chambers County Agricultural Co., 7, Wm. Bloodgood sur, 525 ft from n and 610 ft from w line.

CLAY COUNTY — Mid-Continent Holding Corp., Wichita Falls, H. C. Edrington, 160, 1, B 36, HT&B sur, 150 ft from w and 750 ft from s line.

COOKE COUNTY—Central Oil Co., Dallas, R. H. Deering, 190, 1, F. Hamilton sur, 1470 ft from n and 150 ft from w line.

DE WITT COUNTY—Gibson & McIntyre, Fort Worth, W. Von Roeder, 100, 1, W. G. Hill sur, 750 ft from n and 200 ft from w line.

EASTLAND COUNTY—Harry Atwood et al, Ranger, A. S. Ainsworth, 128, 1, S. M. Mathis sur, 750 ft from w and 150 ft from s line.

FAYETTE COUNTY—National Oil Co. of Texas, San Antonio, A. Hunger, 109, 1, S. M. Williams No. 1 sur, 300 ft from w and 375 ft from s line.

FOARD COUNTY—Humble, Wichita Falls, J. Matus, 160, 1, S 33, B 8, H&TC sur, 450 ft from n and 150 ft from w line sw¼.

FISHER COUNTY—Roeser & Pendleton & Landreth Prod. Corp., Albany, J. T. Johnson, 159, 1, S 71, B 1, HT&B sur, 330 ft from n and 530 ft from w line.

GRAY COUNTY—Danciger O. & R. Co., Fort Worth, E. Jackson, 160, 11, S 88, B B2, H&GN sur, 490 ft n of center of nw¼. Gulf Prod. Co., Fort Worth, G. H. Saunders, 160, 2, S 3, B 1, ACH&B sur, 990 ft from s and w lines of sw¼. Texas Co., Wichita Falls, Coombs-Werley, 80, 4, S 36, B 3, I&GN sur, 330 ft from s and 902 ft from w line se¼. A. Chapman, 160, 3B, S 69, B 25, H&GN sur, 330 ft from n and w lines of se¼. Mordyan Pet. Co., Pampa, M. B. Davis, 80, 2, S 8, B 1, A.CH.&B.sur, 330 ft from n and 990 ft from e line s½ of nw¼. White Eagle O. & R. Co., Borger, J. W. Knopp, 80, 1, S 29, B B2, H&GN sur, sw corner. Texas Co., Wichita Falls, J. E. Williams, 480, 6, S 6, B 1, ACH&B sur, 1975 ft from e and 330 ft from s line of sec. M. A. Shaw, 279, 3, S 5, B 1, ACH&B sur, 1975 ft from e and 330 ft from s line of sec.

GLASSCOCK COUNTY—Shell Pet. Corp., Dallas, Roberts, A 80, 2, S 156, B 29, W&NW sur, 1650 ft from n and 330 ft from w line e½ nw¼.

HOWARD COUNTY—Shell Pet. Corp., Dallas, Settles, B 40, 1, S 135, B 29, W&NW sur, 990 ft from w and 330 ft from s line ne¼ sw¼. Kloh, 80, 1, S 13, B 33, Twp. 2, 330 ft from n and e lines of e½ of se¼.

HASKELL COUNTY—Barnsdall Oil Co., Tulsa, D. Roberts, 640, 1, S 170, B 46, P. Maas sur, 300 ft from e and 250 ft from s line nw¼. Midland Oil Co. et al, Fort Worth, A. Stasc, 40, 1, R. W. Nabors sur, 1980 ft from w and 1170 ft from s line of sur.

HARDIN COUNTY—Lake View Oil Co., Sour Lake, Hardin County Oil Co., 35, 60, S. Jackson sur, 100 ft e of center of w line.

HARRIS COUNTY—Humble Oil & Ref. Co., Houston, B. F. Williams, 3, W. W. Williams sur, 1460 ft from e and 51 ft from n line.

HUTCHINSON COUNTY—Prairie Oil & Gas Co., Ranger, C. Merchant, 2, S 37, B 47, H&TC sur. F. E. Devore, Amarillo, Johnson, 40, 1, S 28, B Y, A&B sur, 330 ft from s and e lines. Midwest Exploration Co., Amarillo, Moore, 80, 2, S 125, B 4, I&GN sur, 1320 ft e of No. 1.

IRION COUNTY—Baku & Hodges, Brownwood, F. Tankersley, 80, 1, S 23, GC&SF sur, 1433 ft from n and 150 ft from w line nw¼.

JACK COUNTY—Frank Parsons, Wichita Falls, W. H. Terrell, 80, 1, S 17, W. L. Herring sur, 150 ft from n and e lines. F H E Oil Co. et al, Sherman, J. M. Daugherty, 100, 3, I. Hughson sur, 562 ft n of No. 1. Frank Buttram, Oklahoma City, Okla., D. Lindsey, 500, 1, I. N. Wright sur, 250 ft from e and 1460 ft from s line. Texas Co., Wichita Falls, J. M. Daugherty, 80, 2, I. Hughson sur, 300 ft from n and e lines.

JEFFERSON COUNTY—Texas Co., Houston, S. W. Pipkin, 575, 2, S 172, T&NO sur, 150 ft n and 150 ft e of No. 1. Yount-Lee Oil Co., Beaumont, McFaddin, 110, P. Humphreys sur, 1367 ft from w and 1135 ft from n line; 108, same sur, 1, 1284 ft from w and 1255 ft from n line; 109, same sur, 1580 ft from w and 1150 ft from n line.

KIMBLE COUNTY—C. L. Bryant, London, C. E. Lambert, 269, 1, S 43, F. Latta sur, 700 ft from n and 885 ft from w line.

LIMESTONE COUNTY — G. C. Jenson, Mexia, H. Powell, 7, 1, P. Varela sur, 188 ft from n and 245 ft from e line. Fentress & Wood, Waco, M. E. Sullivan, 95, 1, Basden sur.

LAMPASAS COUNTY—Acuff & Davidson Co., Lampasas, C. Mitchell, 1, C. Williams sur, se corner.

MILAM COUNTY—J. W. Stiff, Cameron, M. Winston, 137, 1, J. Leal sur, 400 ft from n and 200 ft from e line.

MONTAGUE COUNTY—Farlyn Oil Co., Houston, R. W. Cunningham, 61, 2A, L. R. Norton sur, 1350 ft from n and 150 ft from w line.

MEDINA COUNTY—Trapshooter Reilly Oil & Royalties Co., San Antonio, J. E. Adams, 320, 1, No. 463, L. Fritz sur, 911 ft from n and 1244 ft from w line.

MONTGOMERY COUNTY—Cullen & West Prod. Co., Houston, Chase Nat'l Bank, 738, 1, Sec. C, D. Garrett sur 2, 125 ft from w and 2000 ft from s.

NAVARRO COUNTY—Riverland Oil Co., Tulsa, J. H. Finch, 2, E. Wickerson sur, 1400 ft from e and 1000 ft from s line. G. C. Kent, Corsicana, C. W. Lockhart, 72, 2, R.C.S.L. sur, 300 ft nw of No. 1; J. Bressie, 220, 4, T. J. Sweeney sur, 640 ft from nw and 1100 ft from sw line.

PECOS COUNTY—Mid-Kansas O. & G. Co., Tulsa, M. A. Smith, 640, 6, S 31, B 194, GC&SF sur, 712 ft from n and 1444 ft from e line. Geo. D. Morgan, Fort Worth, F. E. Toborg, 320, 1, S 539, Arnold-Barrett sur, 330 ft n and 330 ft w of center of S 1. Taylor Link Oil Co., San Angelo, University, 80, 2, S 31, B 16, Univ. Lands sur, 330 ft from n and 1046 ft from w li se. California Co., Midland, I. G. Yates, 640, 20, S 34, B 194, GC&SF sur, 1042 ft from n and 2591 ft from w li of se. Marland Prod. Co., Fort Worth, I. G. Yates, 320, 29S, S 60, B 1, I&GN sur, 1698 ft from n and 3243 ft from w li e½; 30S, 1885 ft from n and 3208 ft from w line; 31S, 1885 ft from n and 3146 ft from w line; 32S, 1295 ft from n and 3234 ft from w line; 33S, 1922 ft from n and 3115 ft from w line; 34S, 1920 ft from n and 3030 ft from w line; 35S, 2149 ft from n and 3145 ft from w line of e½. World Oil Co., Fort Worth, University, 40, 1, S 31, B 16, Univ. Lands sur, 330 ft from n and w li sw¼ of ne¼; University, 40, 1B, S 13, B 18, Univ. Lands sur, 330 ft from n and e li ne¼ of ne¼.

PALO PINTO COUNTY—T. P. Coal & Oil Co., Ranger, J. N. Stuart, 640, 159, S 71, B 4,

T&P sur, 2450 ft from n and 1750 ft from e line.

PANOLA COUNTY—Jos. D. Frich, St. Louis, Mo., R. Johnson, 5, 1, B. C. Jordan sur, 340 ft from n and 700 ft from w line.

REFUGIO COUNTY—Sun Oil Co., Beaumont, W. L. Rea, 65, 2, Refugio sur, 333 sw of No. 1.

SHACKLEFORD COUNTY—Prairie O. & G. Co., Ranger, J. M. Matthews, 80, 1, S 29, E. T. Ry. sur, 450 ft from n and 150 ft from e li s½ se¼. Putnam Oil Co., Cisco, J. T. Cockrell, 40, 15, S 15, L. A. L. sur, 300 ft n of No. 7 ne¼ of ne¼. Campbell Oil Corp., Abilene, C. A. Bowman, 80, 1, S 90, B 12, T&P sur, center of s½ of nw¼. M. F. Owens et al, Abilene, W. C. Owens, 22, 5, S 20, Bayland Asy. sur, 150 ft from e and 450 ft from s line. Reading, Sedgwick & Webb, Albany, W. P. Newell, 80, 1, S 115, E. T. Ry. sur, 150 ft from n and e lines of n½ of ne¼. Tom James, Albany, W. P. Newell, 100, 1, S 87, E. T. Ry. sur, 2593 ft from s and 3070 ft from w li of Sec. St. Mary's Oil & Gas Co., Moran, B. L. Owens, 21, S 20, Bayland Asy. sur, 270 ft from n and 150 ft from e li sw¼. Loggie & Arendt Oil Co., Albany, J. Blach, 320, 25, 507 TE&L sur, 150 ft from nw and 525 ft from ne li of e¼. Meredith & Grant, Moran, P. J. Lynch, 40, 1, S 7, Blind Asy. sur, 750 ft from n and 150 ft from w li nw¼ sw¼.

TRAVIS COUNTY—J. W. Allen, Austin, Wm. McAngus, 400, 1, T. B. Westbrook sur, 400 ft from s and 300 ft from w line.

UPSHUR COUNTY—Wilbor, Hildreth & R. H. Dearing & Sons, Fort Worth, J. H. Hudspeth, 167, 1, J. C. Dearmore.

UPTON COUNTY—Prairie Oil & Gas Co., Ranger, Upton Corp., 1091, 1, B X, C. C. Dewitt sur, 330 ft from s and w lines.

WICHITA COUNTY—Bonner Oil Co., Wichita Falls, Cole, 158, 31, J. McCool sur, 550 ft from e and 150 ft from s line. Rubsam & Hunter, Wichita Falls, W. D. McClure, 85, 9, B 3, GC&SF sur, 485 ft from n and 450 ft from w line. L. G. Bradstreet Co., Fort Worth, L. C. Denny, 160, 1, C. Balch sur, 850 ft from w and 450 ft from s line. Reno Oil Co., Wichita Falls, J. E. Roller, 80, 3, S. Holloway sur, 500 ft from n and 150 ft from e line. United Prod. Co., Wichita Falls, H. M. Mungerm, 1B, B 30, W. V. F. L. sur, 150 ft from n and w lines; H. M. Munger, 1A, B 31, W. V. F. L. sur, 150 ft from n and e lines. Humble, Wichita Falls, Waggoner, 70, 3, B 1, M. A. Willis sur, 750 ft from n and 772 ft from w line. E. R. Mount et al, Wichita Falls, Waggoner, 40, 3, B 10, H. George sur, 300 ft w of No. 1. Hi Land Oil Co., Wichita Falls, Waggoner, 40, 1, S 8, B 9, GH&H sur, 510 ft from w and 150 ft from s li blk 9. Culbertson Co., Wichita Falls, J. & J. Waggoner, 465, 60, S 13, BS&F sur, 995 ft from e and 400 ft from s line. King Royalty Co., Wichita Falls, Couch, 90, 19, J. W. Robertson sur, 300 ft w of No. 15. Mid-Continent Holding Corp., Wichita Falls, N. R. Temple, 81, 4, B 8, P. P. C. S. L. sur, 300 ft se of No. 1. H. H. Temple, Wichita Falls, G. W. Norwood, 65, 1, B 36, P. P. C. S. L. sur, 186 ft from e and 770 ft from s line. Harry Hines, Wichita Falls, T. L. Burnett, 25, 7A, S 6, G. R. Meade sur, 300 ft n of No. 1 sw¼ of se¼. Continental Oil Co., Wichita Falls, Waggoner, C, 160, C3, B 21, H. George sur, 150 ft from s and e lines of blk 21. Bullington, Lee, Pendleton & Bullington, Wichita Falls, G. Jennings, 50, 5, S 12, HT&B sur, 300 ft w of No. 2. Coppock & Coleman, Iowa Park, Kemp & Kempner, 10, 1, B 45, W. V. F. L. sur, 1050 ft from e and 150 ft from n li L 4. Texas Co., Wichita Falls, Waggoner, A9, S 28, H. George sur, 300 ft w of No. 8. Ascot Company, Wichita Falls, J. E. Roller, 100, 48, W. A. Grady sur, 1320 ft from n and 50 ft from w line. American Refg. Properties, Wichita Falls, L. Morgan, 38, 7, L. Meadows sur, 300 ft s of No. 6. Jno. O'Neal, Wichita Falls, Rio Bravo, 77, 32, S 31, B 5, H&TC sur, 960 ft from n and 954 ft from e line; 31, 688 ft from e and 408 ft from s line. Henry Hobbs, Wichita Falls, Munger, 20, 5, B 20, W. V. F. L. sur, 150 ft trom n and e lines of blk 30.

WILBARGER COUNTY—Empire Gas & Fuel Co., Wichita Falls, W. T. Waggoner, 160, 12C, S 25, B 4, H&TC sur, 665 ft from n and 205 ft from e li sw¼. Rathke Oil Co., Wichita Falls, C. D. Watts, 160, 1, S 64, B 15, H&TC Ry. sur, 300 ft from s and w lines of sw¼. L. G. Bradstreet Co., Fort Worth, W. T. Waggoner, 60, 2, B 42, H&TC sur, 150 ft from s and w lines. W. T. Knight, Wichita Falls, W. T. Waggoner, 80, 8, S 40, MEP&P sur, 450 ft from e and 660 ft from s li n½ of nw¼. Fain-McGaha Oil Corp., Wichita Falls, W. T. Wagginer, Y, 200, 5, S 43, MEP&P sur, 605 ft from e and 205 ft from s li nw¼ se¼. Baker & Camp, Wichita Falls, W. T. Waggoner, 160, 12B, T. D. Burnell sur, 1170 ft from w and 150 ft from n line. Waggoner & Kolp, Electra, W. T. Waggoner, 40, 2, S 18, B 4, H&TC sur, 660 ft sw of No. 1.

YOUNG COUNTY—W. R. Stafford, Graham, E. F. Brown, 35, 1, 890, TE&L sur, 150 ft from s and w lines. Brihill Oil Corp. & L. G. Bradstreet, Fort Worth, I. E. Self, 60, 1, A. Dohus sur, 150 ft from s and w lines. Gray & Southerland, Wichita Falls, F. M. Cullers, 40, 1, G. Stinnett sur, 450 ft from w and 150 ft from s line.

ARKANSAS

OUACHITA COUNTY—Skelly Oil Co., N. N. Wood 2, 2340 ft s, 1020 ft w of ne c of Sec. 34-15-15. Hamilton Con. Oils, Inc., Arnold and Doyle 1, 631 ft e and 200 ft n of sw c se se Sec. 23-15-16.

Completions

(Continued from page 183)

TEXAS GULF COAST

Company, Well and Loctaion	Initial Production Bbls.	Depth
BATSON—		
Gulf, Knightland Fee 18, dd	*	1130
Capitol Oil Co., Hodges 11	*	3190
BIG CREEK—		
Gulf, T. W. Davis 37, dd	*	4440
BLUE RIDGE—		
Gulf, L. W. Luscher 15	1200	4000
BOLING—		
Sun Oil Co., E. C. Farmer 6	*	4072
E. C. Farmer 7	*	1665
Union Sulphur Co., Hill 3	*	1000
Hill 4	*	1300
GOOSE CREEK—		
W. C. Turnbow, Scorrega 6, dd	75	2250
HUMBLE—		
Harvey Smith, Bailey 1	*	1750
Humble, Williams 1	*	4887
The Texas Co., Wheeler & Pickens 21	*	4300
HIGH ISLAND—		
Gulf, Geo. E. Smith 9	1800	3050
HULL—		
Gulf, Phoenix Dev. Co. 93	600	2960
ORANGE—		
Orange Pet. Co., Michael-Berwick 3, dd	25	3285
Rex Pet. Co., Carbello B-2, dd	2	3355
Supreme Oil Co., Jackson 3, dd	30	3420
PIERCE JUNCTION—		
Gulf, H. C. Cain 8	2200	4950
RACCOON BEND—		
Humble-Valley, Mitchell A-1	100	3395
Thompson 4	300	3220
Mitchell B-1	400	3515
Koehn B-1	¶5	1012
H. Mahnke 1	¶3	1021

SOUTHWEST TEXAS

Company, Well and Loctaion	Initial Production Bbls.	Depth
SALT FLAT—		
Humble, C. F. Dye 3	75	2705
F. Gray B-2	200	2681
F. Gray B-3	150	2684
F. Gray D-1	125	2698
Addie Hinds A-4	700	2690
Addie Hinds A-5	100	2707
J. A. Northcut 2	*	3350
Clyant Smith 3-A	150	2712
Clyant Smith 4-B	200	2701
Clyant Smith 5-B	125	2707
T. A. Tiller 4	900	2685
F. Gray C-3	200	2665
Shell, Clyant Smith 1, dd	130	2684
BASTROP COUNTY—		
Humble, Haywood A-1	*	965
BEXAR COUNTY—		
Indian Creek Oil Co., Wolfshahl 1	*	1700
WEBB COUNTY—		
Carolina-Tex Oil & Gas Co., Benevides 7	¶18	2600
Trussell-Cezeaux-Putnam, Bruni 3	*	2368
ZAPATA COUNTY—		
O. W. Killam, Cuellar 14	50	1476
TRAVIS COUNTY—		
Shell, Philquist 1	*	3008

ARKANSAS

Company, Well and Loctaion	Initial Production Bbls.	Depth
OUACHITA COUNTY—		
McDonald Bros., Wilson B-3, 25-15-18	1140	2785
UNION COUNTY—		
Rushing et al, Lynn 1, 7-17-13	*	3312

CALIFORNIA

Company, Well and Loctaion	Initial Production Bbls.	Depth
DOMINGUEZ—		
Shell Oil Co., Reyes 39	3100	4900
LONG BEACH—		
Congress Pet. Corp. 1	2000	7025
Dabney-Johnson Oil Corp. 7	215	6630
28	2200	7331
31	2550	7440
Delaney Pet. Corp., Wellington 1	1250	7200
Dunlap, O. D. 2	350	4740
Richfield Oil Co., Haas 11	271	6954
Shell Oil Co., Slusher 16	1872	6889
MARICOPA FLATS—		
North American Cons. Oil Sunset Extension 1	4000	3043
MT. POSO—		
Pet. Securities Glide 16	*	1848
SANTA FE SPRINGS—		
Cooperative Oil Synd. 2	5000	6800
K. G. Pulliam 1	6500	6820
Rio Grande Oil Community 2	240	6565
Shell Oil Co., G. H. N. 17	1024	6480
Standard Oil Co., Walker 13	350	6585
Union Oil Co., Alexander 17	8609	6855
Bell 34	6123	6880
SEAL BEACH—		
Associated Oil Co., Bryant 1	1128	5770
VENTURA AVENUE—		
Shell Oil Co., Taylor 30	856	7108
Gosnell 29	300	7445

Los Angeles to Have Own Equipment Exhibit

Los Angeles.—An oil equipment and engineering exposition is to be held in Los Angeles at the Shrine Auditorium, March 16 to 23, 1930. The announcement describes the exposition as "a technical and scientific gathering of the world's newest developments of instruments and equipment of the oil industry."

Offices have been opened in the Petroleum Securities Building, Los Angeles, with E. G. Lenzner as manager. Lenzer recently sent out a questionnaire to various supply concerns and manufacturers of oil field equipment and received back 35 replies approving the idea of an exposition in California next year and agreeing to take space. Free space will be furnished for scientific exhibits from universities, Bureau of Mines and other kindred organizations, while large assembly rooms will be available for meetings of petroleum organizations.

Many supply men, especially the manufacturers of specialties, feel that thousands of field men and office workers in California never have had an opportunity to make the trip to Tulsa and should have an opportunity of seeing the equipment on display at a point within their reach.

WILDCATS FROM ALL SECTIONS

TEXAS GULF COAST

BRAZORIA COUNTY—Empire's Brock 3, Stratton Ridge, dr 4765 ft lime rock. Thos. Faust et al's Fee 4, 2 mi s Nash Dome, dr 1350 ft sand.

CHAMBERS COUNTY — Pure's Mayes 2, Lost Lake, dr 2705 ft sandy shale; Mayes 3, Lost Lake, will test at 2066-2152 ft. Layne et al's Fitzgeraid 1, 1 mi s Barbers Hill, dr 2360 ft gbo.

COLORADO COUNTY — Merrett et al's Zverck 1, 2 mi e Ellinger, dr 575 ft shale. Rich Oil Corp.'s Von Rosenberg 2, 2½ mi w Alleyton, dr 2580 ft gbo. Shell's Hennecke 1, Bernardo, dr 1407 ft. The Texas Co.'s Sears 1, Cat Springs, dr 1305 ft gbo.

FAYETTE COUNTY—Moore et al's Kerr 1, Muldoon, sd 2425 ft. W. J. Kelley et al's Burke 1, 2 mi nw Flatonia, sd 490 ft. Magnolia's Gully 1, 4 mi n Fayetteville, dr 1500 ft. National Oil Co.'s Hunger 1, 8 mi sw La Grange, dr 500 ft lime.

FORT BEND COUNTY—Humble's Miller 1, 3¼ mi w Rosenberg, r 4825 ft. Gulf's Trone 12, Long Point, dr 2525 ft. Grayburg Oil Co.'s Ransom 1, s Richmond, dr 950 ft gbo.

HARDIN COUNTY—Gulf Coastal Oil Co.'s Nona Mills 1, 5 mi e Saratoga, sd 1725 ft.

HARRIS COUNTY—Humble's Simms-Smith 75, Goose Creek, fsh 5243 ft; Irvin 2, Mykawa, dr 3791 ft; Woodburn 1, 2 mi s Genoa, dr 4085 ft shale. Paxton & Pundt's Brown 1, sd 1900 ft. Little York Oil Co.'s Davis 1, Little York, sd 4020 ft.

JEFFERSON COUNTY — River Oil Co.'s Ship Channel Ld. Co. 1, 2 mi se Beaumont, dr 1805 ft gbo. Westbury Oil Co.'s West 1, dr 2000 ft gbo. Bleakie Oil Co.'s Tolliver 1, 2½ mi nw Voth, sd 2750 ft. Vacuum Oil Co.'s J. E. Broussard 1, 9 mi se Fannett, ru. Shell's Heisig 1, 2 mi n Hamshire, dr 5900 ft. Nederland O&G Co.'s Young 1, s Nederland, sd 2520 ft.

LIBERTY COUNTY—Humble's Sterling 5, Moss Bluff, dr 4280 ft. Pure's Liberty Investment Co. 1, n side Moss Bluff, dr 2315 ft. Republic Prod. Co.'s Mysilvec 1, 2 mi s Hardin, dr 4850 ft sand. Gulf's Boyt 2, Hankamer, dr 2350 ft gbo. Ft. Bend Oil Co.'s Bladerack 1, N. Dayton, sd 4630 ft. Sun Oil Co.'s Kovaleik 2, N. Dayton, dr 5290 ft sandy shale. Harrison Oil Co.'s Quintette 4, N. Dayton, dr 2000 ft gbo. Harvey S. Smith's Moore's Bluff Corp. 1, 4 mi s Stilson, dr 1750 ft lime.

MATAGORDA COUNTY—Crossland et al's Hawkins 1, Shepherds Mott, dr 4850 ft.

ORANGE COUNTY — Veteran Oil Co.'s Reed 1, 2 mi se Orange field, sd 4550 ft. The Texas Co.'s Stark 1, Port Neches, ru; Polk 1, Port Neches, dk foundation ready.

VICTORIA COUNTY—Humble's Welder 1, 3 mi se Nursery, dr 3645 ft.

WALLER COUNTY — Kirby Pet. Co.'s Vaughn 1, San Felipe, dr 2570 ft gbo.

WASHINGTON COUNTY—Thomas et al's Giddings 1, 4 mi e Brenham, dr 2900 ft. Fuchs et al's Torn 1, 14 mi sw Brenham, dr 900 ft gbo. Kellett et al's Carter 1, dr 1430 ft shale. Dekle et al's Calhoun 1, 4 mi e Quarry, sd 112 5ft.

WHARTON COUNTY — Hearte Oil Co.'s Brown 1, 5 mi s El Campo, dr 2743 ft gbo.

SOUTH LOUISIANA

ACADIA PARISH — Yount-Lee Oil Co.'s Houssiere-Latrielle 7, Evangeline, dr 3300 ft shale. Crowley O. & M. Co. 4, Evangeline, sd 7563 ft. Crowley O. & M. Co. 5, Evangeline, lcn.

ASCENSION PARISH—Gulf's United Lds. Co. 15, Sorrento, dr 1900 ft. Triumph Oil Corp.'s J. D. Lacey 2, 3 mi se Sorrento town, dr 3200 ft gbo. Big Dome Drlg. & Dev. Co., & J. S. Kimbrough's Rearwood 1, Darrow, dr 4750 ft. Pickhard & Geisman's Breaux 1, 32-10s-2e, sd 3780 ft.

CALCASIEU PARISH—J. O. Davis' Mimms 1, Lake Charles, dr 5600 ft sand.

CAMERON PARISH—The Texas Co.'s Calcasieu Lake B-5, E. Hackberry, ru; Calcasieu Lake A-4, S. Calcasieu Lake dome, lcn. Pure's Yount-Lee 7, Sweet Lake, dr 5830 ft sand.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

Shell's Watkins 11, Black Bayou, bailing at 980 ft.

IBERIA PARISH—The Texas Co.'s Vermillion Bay A-4, lcn. Gulf's State Z-10, Loreauville, ru.

IBERVILLE PARISH—Shell's Wilbert 3, White Castle, dr 5630 ft. Standard of La.'s Wilbert 3, Bayou Blue, ru; Schwing 2, Bayou Blue, dr 300 ft; Schwing 3, Bayou Blue, piling capped; Schwing 5, Bayou Blue, lcn .

LA FOURCHE PARISH—Gulf's Stark 14, Thibodaux, dr 1200 ft; Stark 12, Thibodaux, abn 1475 ft.

PLAQUEMINES PARISH—Gulf's Morris & Rose 1, Spanish Pass, sd. The Texas Co.'s Garden Island Bay 2, ru. Humble's State Land 1, Sec. 2-20s-26e, moving on; Humble's Lake Washington 1, T 20s, R 26e, lcn.

ST. BERNARD PARISH—Gulf Coast O&G Dev. Co.'s State Ld. 1, Sec. 15-14e-15e, sd 710 ft.

ST. LANDRY PARISH—The Texas Co.'s Botney Bay 2, Port Barre, deepening from 3620 ft. Gulf's Gaudet 1, Port Barre, abn in salt at 4225 ft.

ST. MARTIN PARISH—The Texas Co.'s St. Martin Land Co. 1, Hager dome, dr 1580 ft.

TANGIPAHOA PARISH—Joan Dev. Co.'s Lake Superior Piling Co. 1, Section 20-5s-9e, dr 3300 ft lime.

TERREBONNE PARISH—The Texas Co.'s Taylor Bayou B-1, 28-21s-14e, dr 200 ft; Bay Coon Road B-2, 17-22s-18e, dk foundation ready; Bay Coon Road B-3, 17-22s-18e, lcn; Lake Barre A-2, 30-21s-20e, ru; Lake Pelto B-1, 8-23s-18e, oil sand at 1250-75 ft, spraying little oil; Four Isle Bayou B-1, 23-21s-16e, dr 1325 ft cap rock; Timbalier Bay A-1, 19-23s-20e, dr 2800 ft shale; Dog Lake Bayou B-1, 6-22s-16e, lcn; Dog Lake Bayou B-2, 5-22s-16e, lcn.

WEST TEXAS

Company, Well and Location		Initial Production Bbls.	Depth
HOWARD COUNTY—			
Gibson-Johnson et al, Reed 1		20	2975
IRION COUNTY—			
Wittmer O&G Properties, Abe Mayer 3		*	1545
PECOS COUNTY—			
Phillips Pet. Co., Bowser 1		*	1450
Shell Pet. Corp. & Kirby Pet. Co., University 1		*	5203
Tidal Oil Co., University 1		*	1602
World Oil Co., Kloh 1		†	3105

ANDREWS COUNTY — Mid-Continent Pet. Corp.'s Fisher 1, elev 3192 ft, top salt 1720 ft, oil.

BORDEN COUNTY — Louisiana O&R Corp.'s J. S. York 1, lcn. W. A. Moncrief & Humble O&R Co.'s S. I. Munger 1, rig. Teas & Wheeler's Long 1, ur 12½ cas 682 ft.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Nevill 1-A, dr 535 ft. Brewster Oil Co.'s Fee 1, crooked hole 1930 ft. E. L. Chaptop lime 4275 ft, pb from 4674 ft to shoot show man et al's Skinner 2, crooked hole 350 ft. J. P. Johnson & Bert Weekly's Jackson-Harmon 1, elev 3972 ft, dr 2165 ft.

COKE COUNTY—Ray McCamey et al's McCutchen 1, ur cas 3355 ft. Mid-Kansas O&G Co.'s Lackey 1, elev 2152 ft, dr 3855 ft.

CONCHO COUNTY—Lloyd Jones-Liner et al's Jones 1, fsh junk 1975 ft. A. W. Turner & Guardian Oil Co.'s Brosig 1, spudded and sd.

CRANE COUNTY—Gulf's Waddell 7, elev 2763 ft, top salt 1108 ft, top lime 2972 ft, making 5 million ft gas and spray 10 bbls 31.2 deg gravity oil daily after second shot, td 3610 ft; Waddell 8, dk.

CROCKETT COUNTY—W. A. Moncrief et al's R. A. Andrews 1, (Sec. 57), set 12½ cas 643 ft; R. Massie 1, (Sec. 47), elev 2520 ft, pb from sulphur water at 1450 ft to pay 1417-41 ft, and swab 20 bbls oil daily; Todd 1, (Sec. 29), lcn. Taylor-Link Oil Co.'s Powell 3, dr 510 ft.

CULBERSON COUNTY — Deep Rock & Grisham-Hunter's Kloh 3, machine. Hickey et al's Finley 1, elev 3916 ft, sd 2275 ft. Scott & Dittman Drlg. Co.'s Miller 1, elev 4059 ft, dr 2630 ft. West Texas Oil & Explo. Co.'s McGeorge 1, sd 620 ft.

JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, sd 4005 ft.

ECTOR COUNTY—Penn Oil Co. & Humble's Kloh 1, lcn.

EL PASO COUNTY—C. E. Sillix et al's Malone 1, sd 1035 ft.

FISHER COUNTY—Cranfill-Reynolds Co. & Sun Oil Co.'s Flanigan 1, elev 1798 ft, dr 1570 ft. Culbertson Bros. et al's Griffin 1, sd 2970 ft. Magnolia's Alice Lee 1, sd 1510 ft. Mid-Kansas & Phillips Pet. Co.'s Stephenson 1-A, dr 355 ft. Mid-West Explo. Co.'s Steele 1, lcn. Roeser-Pendleton & Amerada's Haught 1-A, dr 2130 ft. Roeser-Pendleton & Landreth's Johnson 1, dr 260 ft. Texas Co.'s Stephens 1-B, dr 315 ft.

GARZA COUNTY—Emerald Oil Co.'s Bargsley 1, dr 1740 ft. Gulf Prod. Co.'s Street 1-D, elev 2505 ft, top salt 770 ft, dr 3175 ft. Paul Steed et al's J. M. Boren 1, lcn. Thompson et al's F. Tuffing 1, rig.

GLASSCOCK COUNTY—A. & F. Oil Co.'s S. Turner 1, elev 2543 ft, top lime 2155 ft, sr hole 2460 ft. California Co.'s E. F. Turner 1, dr 1115 ft. Gibson-Johnson et al's Dean 1, elev 2718 ft, top salt 1075 ft, top lime 2560 ft, dr 3350 ft. Houston Oil Co. et al's McDowell 1, dr 2240 ft. Kirby Pet. Co. et al's Phillips 1, dr 1485 ft. Lion O&R Co.'s Coffee 1, rig. Mid-West Explo. Co.'s Edwards 1, ur 10-inch cas 770 ft. Penn Oil Co. et al's Shaffer 1, dr 870 ft. Texas-State Oil Co.'s Edwards 1, elev 2425 ft, top salt 1300 ft, top lime 2298 ft, coring rotary 2370 ft. World Oil Co.'s McDowell 2-C, rig.

HOCKLEY COUNTY — World Oil Co.'s Ellwood 1, elev 3363 ft, dr rotary 2695 ft.

HOWARD COUNTY—Fuhrman Pet. Corp., W. A. Moncrief & Madz's Reed 1, dr 1600 ft. McGinley-Sigler Co.'s B. Hyman 1, (Sec. 92), put on pump after shot 30 qts. 1327-47 ft. Meriwether Oil Co.'s Eva Smith 1, sd 430 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, dr up 13-inch cas, td 1640 ft. L. E. Lockhart et al's Fee 1, elev 4799 ft, dr granite wash 1685 ft. Geo. E. Richardson et al's Thaxton 1, rotary rig. Western States Oil Co.'s Gardner-Mosely 1, elev 5086 ft, sd 3155 ft; Moore 1, elev 5050 ft, sd 2760 ft.

IRION COUNTY—J. B. Crawford et al's Williams 1, spudded and sd. Hodges & Baker's F. Tankersley 1, dr 415 ft. Kingwood Oil Co. et al's Sugg 1, elev 2334 ft, dr sandy-lime 7420 ft. Pecos Valley Oil Co.'s Stocks 2, elev 2265 ft, fsh 1200 ft. F. E. Webb et al's Nutt 2, machine. P. H. Williams et al's Ashe 1, dd, co 3525 ft.

JONES COUNTY—J. H. Adsit et al's Swenson 1, fsh 1440 ft. W. G. Clark et al's Miller 1, dr 1110 ft; Newman 1, dr 925 ft. Sam Knepley et al's Horn 1, elev 1759 ft, top lime 2410 ft, fsh 2809 ft. McGinley-Sigler Co.'s Whittemore 1, set cas 2621 ft. Mid-Tex O&G Co.'s King 1, spudded and sd. F. E. Shaheen et

XUM

THE OBLIGATION OF LEADERSHIP IS TO LEAD

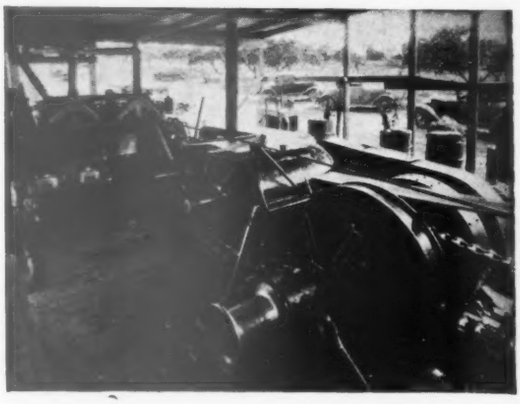
When Mead Bros., Inc., sought a larger Portable Drilling Rig for deepest and heaviest drilling they came to leaders in the construction of this type equipment.

As a result the Portable Rig Company has constructed the largest gasoline-natural gas Portable Drilling Rig ever manufactured.

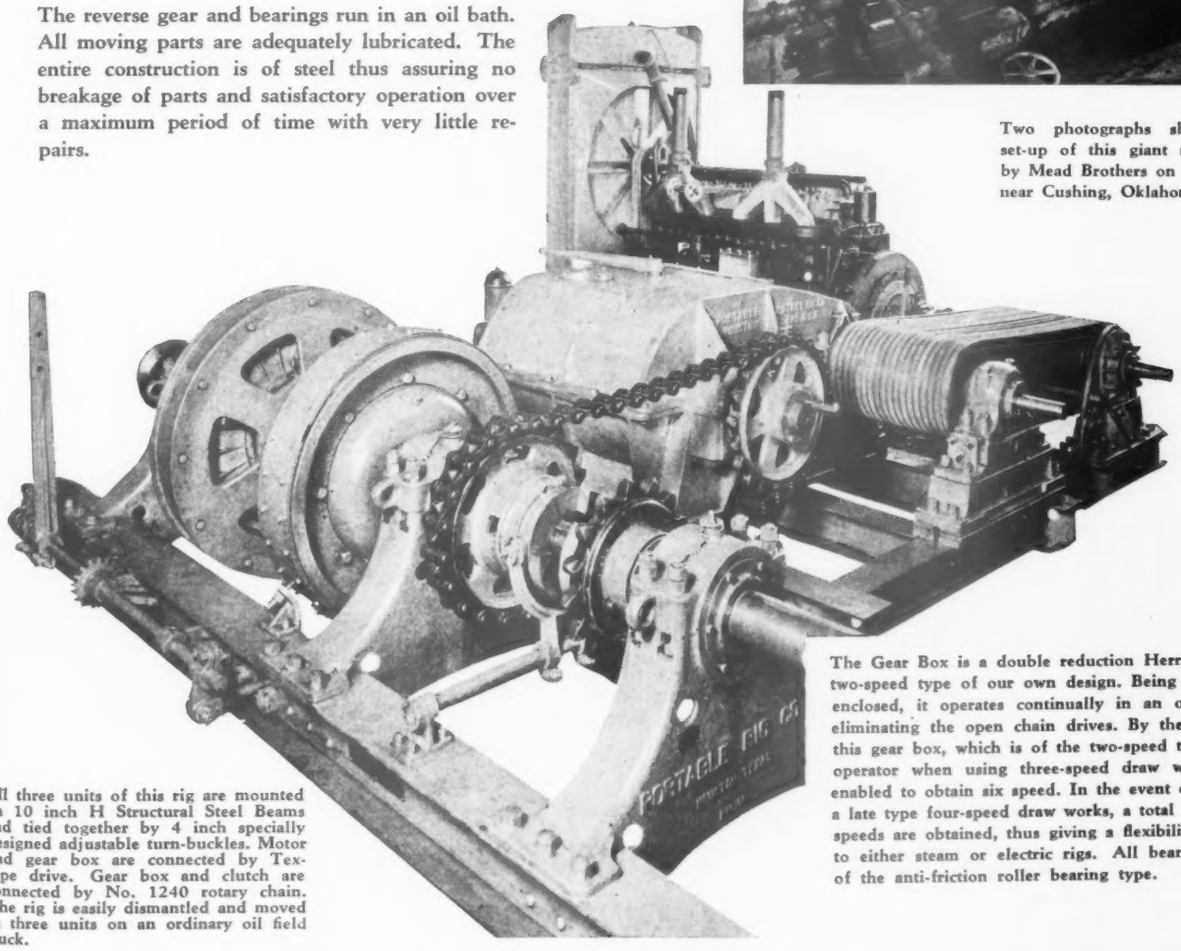
This rig consists of three units; the reversible clutch unit and gear box, both of which were designed and constructed in our own plant, and a Waukesha Great Six 125 H.P. gasoline-natural gas engine.

The reversible clutch unit, the largest and heaviest ever constructed for drilling is designed to stand extra heavy loads and severe shocks. It is of very heavy construction throughout with two Timken anti-friction bearings to each pedestal. The housing and split type sprocket is carried between two extra heavy anti-friction bearings, thus assuring free idling motion at all times.

The reverse gear and bearings run in an oil bath. All moving parts are adequately lubricated. The entire construction is of steel thus assuring no breakage of parts and satisfactory operation over a maximum period of time with very little repairs.



Two photographs showing the set-up of this giant rig as used by Mead Brothers on Hall No. 1 near Cushing, Oklahoma.



All three units of this rig are mounted on 10 inch H Structural Steel Beams and tied together by 4 inch specially designed adjustable turn-buckles. Motor and gear box are connected by Texrope drive. Gear box and clutch are connected by No. 1240 rotary chain. The rig is easily dismantled and moved in three units on an ordinary oil field truck.

The Gear Box is a double reduction Herringbone two-speed type of our own design. Being entirely enclosed, it operates continually in an oil bath, eliminating the open chain drives. By the use of this gear box, which is of the two-speed type, the operator when using three-speed draw works, is enabled to obtain six speed. In the event of using a late type four-speed draw works, a total of eight speeds are obtained, thus giving a flexibility equal to either steam or electric rigs. All bearings are of the anti-friction roller bearing type.

PORTABLE RIG COMPANY, INC.

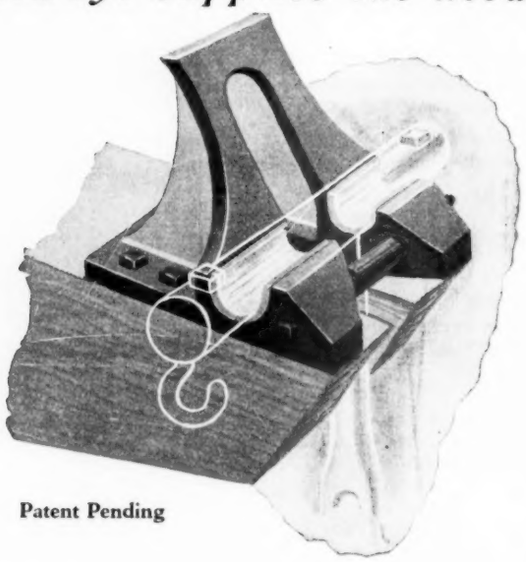
HOUSTON, TEXAS

BURNS—A Name That Has Always Stood for Highest Quality

A BURNS
Tubular Temper Screw

drilled the Group No. 1 Oil Corp. Well No. 1-B the deepest well in the world.

Whenever they need the best, BURNS *always supplies the need.*



Patent Pending

The same BURNS
Quality in a new product

THE BURNS BEAM BEARING

for Temper Screws, saves the beam and makes unnecessary the practice of *half-soling*, or nailing a block of hardwood to the beam head. A *Safety first* device as it is impossible for Temper Screw to jump out.

No working parts, nothing to get out of order. Babbitt bearings prevent wear on the temper screw head. For sale by your Supply Store, write for prices.

BURNS *Tool Company*
OKMULGEE - OKLAHOMA

al's King 1, spudded and sd. White Eagle O&R Co.'s Teague 1, dr 2690 ft.

LOVING COUNTY — Lockhart & Co.'s Bower-Wells 2, top salt 725 ft, dr 3150 ft; Hazell 1, elev 2705 ft, dr 3550 ft; Johnson 1, elev 2915 ft, top lime 3272 ft, sd hfw 3310-28 ft; Wheat 1-H, co 4197 ft.

LYNN COUNTY—Hart Oil Corp. & Geo. McCamey's Edwards 1, elev 3128 ft, top salt 2140 ft, dr 3800 ft.

MENARD COUNTY—J. L. Duffy & Carl Cromwell's Winslow 1, elev 2141 ft, sr 1905 ft.

MIDLAND COUNTY — Phillips Pet. Co.'s Stokes 1, elev 2666 ft, top salt 1610 ft, top lime 3720 ft, dr 4290 ft.

MITCHELL COUNTY — Simms Oil Co.'s Ellwood 1, elev 2237 ft, top lime 1215 ft, dr 4645 ft. Republic Prod. Co.'s Scott 1, dr 2845 ft. Reas & Wheeler's Radford 1, sd 4080 ft. Westyde Inv. Co.'s Ellwood 1, elev 2185 ft, dr 2700 ft.

NOLAN COUNTY—L. G. Bradstreet et al's Kuteman 1, elev 2488 ft, dr sandy-lime 3525 ft. Phillips Pet. Co.'s Plunkett 1, set cas 3145 ft.

PECOS COUNTY—Anderson-Prichard & M. Warner's Masterson 1, lcn. Continental Oil Co.'s University 1-A, dr 815 ft. Karl Crowley et al's Heiner 1, elev 2548 ft, sd 1302 ft. Ditto Oil Interests' Montgomery 1, elev 4434 ft, sd 1505 ft. Doran & McGee's Pecos Valley 1, elev 2437 ft, top salt 1080 ft, pb from sulphur water 1662-70 to 1580 ft and shot, now co and flowing 20 bbls oil daily. Cowboy Evans et al's Pecos Valley Fee 1, sd 710 ft. Gibson-Johnson et al's Grace 1, top salt 890 ft, fsh 1700 ft. Independent O&G Co.'s Rayburn-Realty 1, elev 2459 ft, top salt 1089 ft, cem 8-inch cas 1493 ft. Jay Hawk Pet. Co.'s Price 1, spudded and sd. J. L. Kennedy et al's M. R. Kennedy 1, lcn. Sam Kitts et al's Sherbino 1, top salt 975 ft, sd 1010 ft. Landreth Prod. Corp.'s University 1, spudding. Mauch & Krogens' Holmes 1, elev 2325 ft, top salt 535 ft, sd 1442 ft. W. A. Moncrief et al's Clarkson 1, (Sec. 84), lcn; Toberg 1, dr 110 ft; University 1, (Sec. 27), machine; University 1, (Sec. 13), dr 485 ft. R. E. Moore et al's Arnold 1, dr 916 ft. J. D. O'Mara et al's Byrne-Butz 1, swab 25 bbls clean oil 12 hrs. 1338-75 ft; E. W. Bennett 1, rig; W. C. Streety 1, rig. Pecos Crude Oil Pur. Co.'s Pecos Valley 3, spudding O. J. Perren et al's L. Peterson 1, dr 460 ft. Phillips Pet. Co.'s Courtney-Pryor 1, elev 2951 ft, cased off oil production at 1345-75 ft, dr 2250 ft; Courtney-Pryor 2, machine. Plymouth Oil Co.'s Perry 2, elev 2899 ft, pb from hole full water at 1858 to 1845 ft and swab 35 bbls oil. Rowan & Tong's McDonald 1, top salt 725 ft, dr 755 ft. Mrs. M. M. Rowan et al's University 1, lcn. Schumaker et al's Williams 1, elev 2388 ft, sd hfw 1303-65 ft. Seminole Oil Co.'s Cordova 1, lcn. Sheli Pet. Corp.'s T. S. Jackson 1, rig; University 1-B, machine. Talbot et al's Unsicker 1, machine. Taylor-Link Oil Co.'s University 2, dr 230 ft. Irvin Drlg. Co. & B. J. Spikes et al's Brown 1, elev 2387 ft, top salt 740 ft, sd 2258 ft. Texas Co.-Phillips Pet. Co. et al's Campbell 1, top salt 1010 ft, dr 1215 ft. Tidal Oil Co.'s University 1-B, (Sec. 3), dr 145 ft; University 1-C, (Sec. 17), spudding. Transcontinental's University 1, elev 2552 ft, top lime 1035 and 3315 ft, dr by tools 4312 ft. Trees Oil Co.'s J. C. Trees 2, rig. D. D. Webb et al's Fee 1-A, dr 370 ft. Clayton Williams et al's Sanford 1, sd 1285 ft. World Oil Co.'s University 1, (Sec. 31), rig; University 1-B, (Sec. 13) machine.

PRESIDIO COUNTY—Brite Prod. Co.'s L. C. Brite 4, sd 569 ft. C. E. Miller et al's Tootle 1, sd 3503 ft. TP Coal & Oil Co.'s W. W. Bogel 1, rig.

REAGAN COUNTY—Big Lake Oil Co.'s University 1-C, elev 2731 ft, top salt 1100 ft, dr hard lime 3115 ft; University 2-C, elev 2703 ft, lost rotary returns, td 2996 ft; University 131, cem 5 3/16 cas with 125 sacks at 7809 ft, dr cement plug at 7776 ft.

REEVES COUNTY—H. T. Hansford et al's Williams 1, rig. Earl Hemby et al's Brooks-Huling 1, spudded and sd. Southern Crude Oil Pur. Co.'s Kloh 1-A, elev 2784 ft, dr 670 ft. D. R. Thompson et al's Eddins 1, elev 2719 ft, top salt 1622 ft, top lime 3216 ft, fsh 5658 ft. Lee O. White et al's Mrs. Lizzie Hershenson 1, elev 3244 ft, dr 1705 ft.

RUNNELS COUNTY — Herbert Oil Co.'s Currie 1, sd 2150 ft. Independent O&G Co.'s Rollwitz 1, dr 4115 ft.

SCHLEICHER COUNTY — McKavitt Oil Co. & Carl Cromwell's Tisdale 1, elev 2155 ft,

dr 3415 ft. Phillips Pet. Co.'s (was Interstate Oil Co.) J. A. & W. T. Whitten 1, testing good show oil with water in sandy-shale 4135 ft. Underwood Oil Co.'s Tisdale 1, spudded and sd.

SCURRY COUNTY — Camp Springs O&R Co.'s Quinn 2, rig. Cottingham & Briscoe's Truss 1, spudding. R. B. Pender et al's Davis 1, elev 2208 ft, top salt 445 ft, dr 3220 ft. Texas-Canadian Oil Co.'s Mooar 1, lcn.

SUTTON COUNTY—Phillips Pet. Co.'s Holman 1, elev 2277 ft, top lime 2317 ft, fsh 6633 ft. L. G. Priest et al's Allison 1, elev 2337 ft, had show oil 2634-40 and 3171 ft, sd 3250 ft.

TAYLOR COUNTY—B. L. Carpenter et al's Harrison 1, lcn. J. B. Jameson et al's Webb 1, elev 1905 ft, top gray lime 4500 ft, dr 4535 ft. Magnolia's Hamner 1, dr 2955 ft. Mid-Continent Pet. Corp.'s Cody 1, dr 1060 ft. C. M. Root Drlg. Co.'s Martin 1, dr up junk 2475 ft.

TERRELL COUNTY—Big Bend Oil Corp.'s Bassett 1, dr 750 ft. Keck-Pecos Oil Trust's Hamilton 1, elev 1733 ft, sd 2550 ft. Mrs. J. B. McPhee et al's Sam Belt 1, sd 645 ft. Milham Corp.'s Bassett 1, elev 2270 ft, fsh 5245 ft.

UPTON COUNTY—Prairie O&G Co.'s McQuatters 1, rig.

VAL VERDE COUNTY—Dyer Bros. et al's Wilson 1, elev 2115 ft, dr black lime 3015 ft. Producers Oil Co. et al's Everett 1, dr by junk 2510 ft. Valvert Oil Corp.'s Bassett 1-A, elev 2069 ft, dr by cas 3300 ft, td 3760 ft.

WARD COUNTY — Atlantic & Delmar's Hayzlett 3, top salt 727 ft, dr 1730 ft. Continental Oil Co.'s Sealy 2-A, rig. C. C. Dorr et al's J. L. Costley 1, lcn. Gulf Prod. Co.'s Hutchings Assn. 2, elev 2655 ft, top salt 1240 ft, top brown lime 2250 ft, top sand showing oil 2583-2610 ft, dr and coring; O'Brien 6, dr 350 ft; Wristen Bros. 1, top salt 720 ft, flowed 88 bbls 38.2 deg. gravity oil at 2420-60 ft; Wristen Bros. 2, top salt 705 ft, dr 1380 ft. Penn Oil Co. & Atlantic's Bennett 1-A, set cas 365 ft. Ramsire et al's J. F. Boogher 1, machine. Shipley Oil Corp.'s Hayzlett 2, top salt 795 ft, dr 1890 ft; Lee Monroe 1, rig. Tex-Oil Prod. Co.'s Redman 1-A, dr 640 ft.

WINKLER COUNTY—V. T. Bolin et al's Brown et al 2, top salt 1300 ft, top lime 2415 ft, sd 2420 ft. Continental Oil Co.'s Morton 1-A, dr 1900 ft. Liner Drlg. Co. et al's Campbell 1, casing trouble 990 ft. Magnolia's Scarborough 2, top salt 1125 ft, top lime 2510 ft, flowing 105 bbls oil 2850-3062 ft. Shell & Llano's Scarborough 7, rig. Texas-Canadian Oil Co.'s Kloh 1, sd 4008 ft.

YOAKUM COUNTY—Bert Weekly et al's Knight 1, elev 3693 ft, dr anhydrite 4070 ft.

ARKANSAS

CALHOUN COUNTY—Ohio Oil Co., Stout Lbr. Co. 1, 31-14-12, drlg. gumbo 2046 ft. Phillips Pet. Co. et al's Freeman-Smith Lbr. Co. 1, 25-16-13, drk pattern.

COLUMBIA COUNTY—Apreco Syndicate of Ark.'s Dennis No. 1, 11-20-23, dr red shale 2410 ft. T. R. Brown et al's Spencer 1, 18-18-22, cmtd 10-inch 380 ft, shut down 410 ft, drlg water well. Helena Oil and Fas Co.'s Pickler 1, 19-19-22, shut down 2762 ft.

FAULKNER COUNTY—Gold Creek Oil & Gas Co.'s Stermer 1, 17-4-13, T. A. 3782 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, T. A. 1400 ft.

LINCOLN COUNTY—Pine Prairie Oil & Gas Co., Carter 1, 33-10-6, T. A. 2176 ft. arr resume drlg.

LITTLE RIVER COUNTY—Grotte et al's Allen 1, 31-12-31, T. A. 2941 ft.

LOGAN COUNTY—Arkansas Natural Gas Corp.'s Hanna 1, 26-7-23, cleaning out under 8⅛-inch, td 3000 ft.

MADISON COUNTY—Independent Oil & Gas Co., Banks & Teague 1, 6-16-17, cmt 6⅝-inch 2168 ft, tested dry, plugged back to 410 ft., arr test shallow gas at 600 ft.

NEVADA COUNTY—C. F. Steele's E. W. Groves 1, 21-14-20, reported abn in error, dr to 2513 ft, wo. Wright Oil Co.'s Groves 4, 12-14-21, wosr 1140 ft.

OUACHITA COUNTY—Copenhaver et al's Warnick 1, 2-15-17, derrick. Flaucher et al's Buck 1, 7-15-17, T. A. 2465 ft. Lohman et al's Fogle 1, 18-14-16, shut down 1489 ft. Phillips Pet. Co. et al's Eagle Mills 1, 11-12-16, top red beds 2410 ft, drlg red shale 2756 ft. Sundby

MILLER
Sand Pump

You can use a 25 or 30 foot barrel and clean your wells *in half the time.*

Chisel Bottom

will save the expense of running tools and its chisel shape prevents sticking in tightly packed sands.

Bailer Bottom

will speed up production in cavy holes by time saved in picking up cuttings.

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Used for cutting the sand loose and preferred by some to the Chisel Bottom.

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The Miller Combination Bailer and Sand Pump is built to stand the tough jobs, constructed of National Seamless Tubing and Sivyer Steel Castings, it is made throughout of steel and eliminates the use of leather washers.

As illustrated, the wire line has direct connection with Plunger, eliminating a rod, enabling use of a longer pump in the well. Plunger is made 18 inches long with eight water courses permitting the fluid to seal the valve on top of the plunger, thus creating a greater suction than in any other pump made. With both the latch and set screw used in the Miller Sand Pump it is impossible to lose a bottom.

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March 1, 1921—No. 1370340

January 20, 1925—No. 1523604

Regular Sand Pump bottom illustrated in position in the pump.

Send for circulars and prices

MILLER
Combination Bailer & Pump Co.

SAPULPA, OKLAHOMA

et al's Faris 1, 27-15-15, cmtd 6⅝-inch cas 2060, T. D. 2083 ft. Timberlake et al's Wright 1, 25-14-18, shut down waiting orders 2907 ft. Wesson et al's Booth 1, 12-15-19, shut down 2203 ft.

UNION COUNTY — Sam Arrendale's Gallagher & Nelson 1, 18-18-17, dr 1300 ft. W. M. Coates Tr.'s McDuffie 1, 32-19-17, coring 3890 ft. O. W. Estes Ramsey 1, 24-17-14, derrick. E. L. Foster et al's Murphy Land Co. 1, 22-17-17, T. A. 1400 ft. Johnson-Gummer Oil Co., Cargile 1, 4-18-13, cored water sand 3180 ft. McDonald Bros.' Mayfield 1, 29-19-15, T. A. 2210 ft. Ohio Oil Co.'s Stout Lbr. Co. 1, Acct. 21, 30-16-13, rig up. Root Refineries Inc.'s Oliver 1, 18-17-13, dr 2616 ft. Stark et al's Ainsworth 1, 8-19-16, derrick. T. J. Woodley's First National Bank 1, 34-19-18, derrick.

EAST TEXAS

MARION COUNTY—Pettit Oil Co.'s River 3, M. G. Noll survey, tested dry 2279 ft, pulling liner to go deeper.

SHELBY COUNTY—Gulf Refining Co., Caraway 1, J. H. Patterson survey, drlg gray lime with streaks of blue shale 5188 ft.

NORTH LOUISIANA

BIENVILLE PARISH—W. G. Gray's Snyder 1, 15-16-6, salt water at 2842 and 2888 ft, shut down 2924 ft.

BOSSIER PARISH—Corbett et al's Murff 1, 18-17-11, shut down 990 ft. Nell & Lanier, Biedenharn 1, 23-21-14, shut down 790 ft. Triangle Drlg. Co.'s 1, Thigpen & Harold, 11-17-12, dr 830 ft. Walker et al's Antrim 1, 28-22-13, shut down 3021 ft. Woodmansee et al's Bollinger 1, 9-22-11, shut down 2532 ft. DCR Oil Co.'s Oden 1, 20-19-14, stdg 700 ft, oil, wosr 2423 ft. Lide et al's Oden 1, 21-19-14, cored shale 2400-10 ft, coring 2415 ft. Fred McWilliams Oden 1, 20-19-14, rig up. Humble Oil & Refining Co. & R. W. Norton's Fortner 1, 32-21-16, sandy lime 4875 ft. S. T. Onyett et al's Dixon 1, 10-19-14, cmtd 10-inch csg 138 ft, drlg 500 ft. I. N. Pharis, Tr.'s, Oden 1, 19-19-14, rig up. Simplex Oil Co.'s Dickson 1, 33-20-14, cored sandy shale 2459-68 ft, arr cmt 6-inch csg. Standard Oil Co.'s Henderson 3, 7-19-14, dk. A. H. Tarver, Glassell & Dickson 1, 31-20-14, rig up. Woodley Pet. Co.'s Knight 4-A, 35-16-12, dr 800 ft.

CATAHOULA PARISH—Lochnager et al's Taliaferro 1, 26-9-6, T. A. 900 ft.

CLAIBORNE PARISH—O. G. Collins et al's Mosley 1, 29-20-5, lcn. El Dorado Chief Oil Co.'s Baker 1, 26-20-7, T. A. 3040 ft; Dance 1, 27-20-7, dk. Southern Crude Oil Purch Co.'s Christian 1, 22-23-6, sandy shale 2169 ft.

DE SOTO PARISH—P. J. Becker et al's Tull 1, 23-12-15, T. A. 1805 ft. Benedum & Trees Oil Co.'s State 2, 22-14-12, lime, 3175 ft. Fair et al's Hamilton 1, 1-12-13, dr 200 ft, 10-in 100 ft. R. O. Roy's Rogers 1, 18-13-14, dr 1800 ft.

FRANKLIN PARISH—Davis et al's Moore 1, 12-11-6, T. A. 1430 ft.

JACKSON PARISH — George O. Baird's Tremont 1, 24-16-1w, salt water and small show gas 3045 ft, sandy shale 3095 ft.

LA SALLE PARISH—Tunica Pet. Co.'s 47 L. & A., 17-7-2e, wosr 818 ft; 48 L&A, 16-7-2e, 10-inch csg 40 ft, dr 100 ft.

LINCOLN PARISH—V. E. Shaw's Voss 1, 1-20-3, shut down 2740 ft.

MOREHOUSE PARISH—Rainbow Oil Co.'s Louisville Cooperage Co. 1, 33-22-8, dk.

NATCHITOCHES PARISH—S. D. McDaniels' Clark & Morse 2, 23-5-6, sd 2336 ft. Robeline O&G Co.'s Cassady 1, sd 3230 ft.

OUACHITA PARISH—Ouachita Nat. Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 3349 ft. Phillips et al's School Fee 1, 16-16-4, hard lime 4060 ft.

RICHLAND PARISH—Austin McDonald's Millsaps 1, 17-17-6, 200,000 ft gas, wo 2510 ft; Millsaps 2, 17-17-6, sd 2697 ft; Millsaps 3 and 4, 16-17-6, loc. Palmer Corp.'s Miles 1, 11-17-6, fsh ds 2732 ft.

SABINE PARISH—R. L. Gay's Bowman-Hicks 4, 14-7-14, dr 200 ft; Long-Bell Lbr. Co. 1, 22-8-14, dr 2105 ft; Sabine Lbr. Co. 2, 23-9-14, blg to test 2234 ft. A. H. Tarver's Long-Bell Lbr. Co. 29-8-13, small show gas and mud, wo 3535 ft.

UNION PARISH—J. E. Cammattee et al's Tugwell 2, 21-22-3e, sd 2250 ft. H. C. McDonald's United States 1, 18-23-1e, sd 1500 ft. Sundby et al's Security Trust 1, 6-23-1e, sd 2300 ft. Donohoe Oil Co.'s Roseberry 1, 33-23-9, cmtd 4½-inch csg 2765 ft. Hudson's Slack 1, 1-22-11, dry wo 2702 ft. Kemp et al's Campbell, 11-22-10, 6-inch 2645 ft.

SOUTHERN CALIFORNIA

BELVEDERE—W. H. Taylor's Hellman 1, 32-1-12, dr brown shale 3920 ft.

CHATSWORTH—Russell Pet. Co.'s Joughin 2, 23-3n-17w, td 1500 ft, co to resume operations.

CLEARWATER—The Texas Co.'s Montana Land Co. 1, dr sandy shale, hard sand 2440 ft.

FULLERTON—Shell Oil Co.'s Bastanchury Ranch 1, 28-3s-10w, dr hard sandy shale 4132 ft.

HAWTHORNE—Standard Oil Co.'s Freeman 1, 5-3-14, dr brown shale, strks sand, 6078 ft.

MONTEREY PARK—Monterey Park Pet. Co.'s Jepson 1, 25-1-12, dr brown shale 4226 ft.

NEWHALL—P. B. Anderson's 1, 1-3-16, co 320 ft. So. Calif. Drlg. Co.'s Needham 1, dr 360 ft.

NEWPORT—Mesa Pet. Corp.'s B&A 1, 16-6-10, dr hard sand 4641 ft.

PIRU DIST.—J. M. Queen's 1, 22-3-16, dr 50 ft spud 7/6/29.

POMONA—Pomona Oil Assn.'s 1, 32-1-18, dr grey sand 1185 ft.

PUENTE HILLS—Brea Canyon Dev. Co.'s Bierd 1, dr brown sandy shale 720 ft. R. C. Rucker's Grazide 1, 27-2-10, dr brown shale 160 ft.

RICHFIELD—Western Drlg. & Prod. Co.'s Day 1, 21-3-9, dr grey sandy shale 5756 ft.

SOUTH LOS ANGELES—Lee & Brainerd's Owens 1, rig. R. B. Jackson's 1, rig.

TELEGRAPH CANYON—Union Oil Co.'s Rimpau 1, 13-3-9, redr 159 ft, td 165 ft.

Salt Flat Production Reaches New Peak During June

LULING, Texas.—Daily average production in Salt Flat field, Caldwell County, reached a new peak of 49,858 barrels during June, representing an increase of 4,197 barrels over the previous high mark established in May. This field has been producing more oil daily than any other area in the Southwest Texas and Gulf Coast region, and is credited with having yielded about 6,623,500 barrels up to the close of June, with 245 wells on production.

Tank car shipments of crude from the Salt Flat field reached an aggregate of 596,500 barrels, with Gulf Pipe Line Company holding the lead on shipments for a total of 292,412 barrels. Humble Pipe Line Company is credited with having shipped 209,261 barrels in tank cars, and it moved 663,618 barrels through its new eight-inch direct pipe line outlet. The Shell Pipe Line Company transported 302,910 barrels through its trunk line system, and held tank car shipments to a total of 5,995 barrels for the month. The Sun Oil Company moved 61,738 barrels in tank cars to Gulf Coast terminal for its refinery at Marcus Hook, Pennsylvania. However, this latter company discontinued the handling of Salt Flat crude on July 19. The Petroleum Pipe Line Company of Texas, which is the only small purchaser in the field, delivered 30,562 barrels of crude oil during June to the Luling refinery of the Central-Texas Refining Company and loaded 27,208 barrels for tank car movement.

SALT FLAT FIELD PRODUCTION

The following table lists the various producing units, and production obtained during the month of June, 1929, by leases, in the Salt Flat field, Caldwell County, Texas:

Company, Farm—	No. Wells	Daily Av. Prod.	Total Prod.
Petroleum Pipe Line Company—			
Cranfill-Reynolds—S. Smith	3	608	18,248
Northcutt	3	334	10,033
Hanson	2	222	6,666
Merriwether	1	44	1,311
Totals	9	1,208	36,258
Atlantic Oil Production Company—Davis	2	93	2,790
Hadley Oil Corporation—Merriwether	1	6	180
Lutex Oil, Inc.—Davis	4	48	1,448
Wilson	6	597	17,924
Sun Pipe Line Company—			
Sun Oil Company—Malone	5	438	13,140
Townes & Porter—Hickman	5	336	10,073
Turman & H. L. Brown—Luling fee	1	86	2,575
Bridges	1	134	4,021
Totals	2	220	6,596
Morgan Brothers, et al—Malone	1	9	274
Victor Oil Company—Golding	1	5	148
Walker Brothers	1	21	640
Totals	2	26	788
Abercrombie et al—Moses	5	531	15,931
Suttle-Carl Brothers—Malone	2	74	2,218
Forrest Oil Company—Bridges	1	46	1,370
Fleming	1	28	834
Totals	2	74	2,204
Golden West Oil Company—Malone	2	79	2,357
Wilson	5	239	9,517
Magnolia Pipe Line Company—			
The Texas Company—New	1	39	1,185
Merriwether	7	691	20,727
Totals	8	730	21,912

SAN BERNARDINO CO.—Urmi Oil Co.'s Schuh-Zellers 1, dr shale and shell 260 ft.

NORTHERN CALIFORNIA

KERN COUNTY

BAKERSFIELD—Taft Well Drlg. Co.'s 2-30-27 Delfino 1, dr sand and boulders 3720 ft.

BELRIDGE—Calkern Oil Co.'s 1, 18-28-22, lcn. Ozena Oil Co.'s 2, 27-29-21, dr sandy shale 380 ft. Ventura-Pacific Oil Co.'s 1, 18-29-22, rep rig, td 3375 ft.

BENA DIST.—Elmer Oil Co.'s 1, 15-30-30, sd 2845 ft.

BUTTONWILLOW - SEMITROPIC—Milham Expl. Co.'s Kern 6, 8-28-23, rmg 2350 ft; Crites 1, 8-28-23, running tbg, td 2484 ft. Richfield Oil Co.'s Redding 1, 36-27-23, running 6 5/8-in cas at 7067 ft, td 7618 ft.

GOULD HILLS—Elmer Oil Co.'s 1, 2-29-20, dr hard brown shale 3270 ft. J. H. Kennedy's 1, 5-29-21, dr hard sandy shale 350 ft. K. C. Wallace's 1, 32-29-21, dr brown shale 1365 ft.

KERN RIVER—Gatton & Gould's 1, td 1450 ft, set 8¼-in cas at 1395 ft, drlg out cmt. Richfield Oil Co.'s Boston 1, 20-28-28, abn, 4852 ft.

LERDO—Shell Oil Co.'s Ansolabehere 1, 5-29-27, dr 3920 ft.

McFARLAND—General Pet. Corp.'s KCL 1, 25-26-26, dr brown shale 5769 ft.

ROSEDALE—Elmer Oil Co.'s Houghton 1-A, dr hard sandy shale 3375 ft.

SHALE HILLS—Day Oil Co.'s 1-A, 1-27-18, dr blue shale 1025 ft.

SAN EMIDIO—Union Oil Co.'s KCL 2, 5-10-21, sd 3667 ft.

Company Farm	No. Wells	Daily Av. Prod.	Total Prod.
Gulf Pipe Line Company—(*)			
Carter	13	2,383	71,488
Conley	7	1,445	43,360
Davis	4	294	8,536
Northcutt	7	3,304	99,128
Jim Smith	1	73	2,198
W. L. Smith	8	696	20,876
M. Tiller	8	1,597	47,903
Wright	8	2,754	82,628
Total	60	12,979	389,407
Humble Pipe Line Company—			
Humble Oil & Refining Company—Allen	8	513	15,405
Trap Briscoe	1	107	3,199
J. J. Davis	4	258	7,729
W. F. Davis	1	41	1,239
Hanson	4	504	15,127
Johnson B	3	482	14,453
Moses & Baggett A	8	1,578	47,347
Moses & Baggett B	9	3,252	97,554
J. A. Northcutt	1	75	2,261
J. L. Northcutt A	4	2,368	71,047
J. L. Northcutt B	2	367	11,005
Clyant Smith A	2	69	2,059
Clyant Smith B	3	659	19,765
Wm. Smith	4	493	14,777
J. B. Tiller	7	471	14,124
J. R. Tiller A	3	2,085	62,547
J. R. Tiller C	2	515	15,451
Wright	3	524	15,729
Totals	69	14,361	430,809
Humble & Luling Oil & Gas Company—			
M. Briscoe A	4	1,347	40,412
M. Briscoe B	1	175	5,248
Floy Gray A	2	780	23,398
Floy Gray C	2	928	27,845
Johnson A	3	584	17,514
J. R. Tiller B	3	669	20,061
J. R. Tiller D	1	46	1,372
T. A. Tiller	3	1,496	44,887
C. F. Dye	2	698	20,928
Totals	21	6,723	201,665
Humble Oil & Refining Company, Luling Oil & Gas Company and The Texas Company—Addie Hinds	3	1,038	31,144
Shell Pipe Line Company—			
Shell Petroleum Corp.—Carter B	3	329	8,865
Dye	2	813	24,399
Malone	5	627	18,819
Moses	4	1,261	37,823
New	5	916	27,493
Clyant Smith	1	147	4,414
Jim Smith	1	81	2,429
W. L. Smith	1	69	2,083
Wm. Smith	5	1,959	58,784
F. Tiller	7	3,893	116,801
Totals	34	10,095	302,910
Totals	245	49,858	1,495,740
Totals for May, 1929		45,661	1,415,487
Totals for April, 1929		40,853	1,225,590

*Magnolia Pipe Line Company ran some oil for Gulf Production Company.

TEMBLOR HILLS—Geo. F. Getty's Phelps 1, 29-31-22, prep to abn, td 3504 ft. Union Oil Co.'s W. P. 1, 27-32-23, dr brown shale 4958 ft; Williams 1, 22-32-23, brown shale, coring 2173 ft.

SANTA BARBARA COUNTY

BETTERAVIA—Shell Oil Co.'s U. S. A5, 36-10-35fi material.

BUELL CANYON—Union Oil Co.'s Buell 1, redr 397 ft, td 1586 ft.

CARPENTERIA—Continental Oil's Kitty C. Bailard 1, dr 4291 ft.

CASMALIA—Keystone Oil Co.'s Paderewski 1, 33-10-34, dr shale and sand 610 ft.

GOLETA—Barnsdall Oil Co.'s Edwards 3, bldg rig. General Pet. Corp.'s More 1, 21-4-28, dr grey sand 4296 ft. Padre Oil Co.'s Dos Pueblos Ranch 1, 8-4-29, abn 4190 ft. Pet. Securities' Bishop 1, dr brown shale 3553 ft.

LOS ANIMAS—L. B. O'Niel's Orena 1, dr 175 ft, spud 7/12/29.

NAPLES—Pacific-Western Oil Co.'s Wiley Ranch 1, 7-4-29, dr sandy shale 3302 ft.

ORELLA—Shell Oil Co.'s Rutherford 1, 36-5-31, coring 4825 ft. Standard Oil's Sudden 1, bldg rig.

POINT CONCEPCION — Western Gulf Oil Co.'s Hollister 1, fsg for dr pipe 3115 ft.

SANTA MARIA—System Oil Co.'s Bradley 1, 36-10-34, dr sand and shale.

SUMMERLAND—Geo. F. Getty's Becker Fee 1, new lcn. Southern Expl. Co.'s Twitchell 1, spd 7/13/29, set 18-in cas.

SURF—Keystone Pet. Co.'s True Ranch 1, rig up.

VENTURA COUNTY

CASITAS—E. J. Miley's 2-A, 12-3-24, dr hard sand 1585 ft.

CONEJO—Triunfo Oil Co.'s 24-1-19, dr brown shale 1350 ft.

FILLMORE—Frank Oil Co.'s 35-4-20, dr hard sand 1892 ft.

LOCKWOOD VALLEY—Lockwood Valley Oil Co.'s 1, 28-8-21, dr sand and shale 90 ft.

OJAI—Calif-Ventura Oil Co.'s LaCrosse 1, td 2495 ft, fsg for iron.

SULPHUR MOUNTAIN—Continental Oil Co.'s 3-21-22, dr shale and shell 1780 ft.

PIRU—Bolsa Chica Oil Co.'s Snow 1-A, 4-4-18, rmg 600 ft. Pacific-Western Oil's Tehmescal 5, 3-4-28, td 4518 ft, 6 5/8-in cas cmt 3252 ft. Wasibi Oil Co.'s Bishop 2, 34-5-19, dr hard grey sand 3435 ft.

SANTA PAULA—San Pedro-Pt. Fermin Oil's Kellerman 1, 13-4-21, td 980 ft, fsh for lugs.

SATICOY—Standard Oil's Citrus 5, 10-2-22, dr hard brown shale 7358 ft.

SIMI—Shell Oil Co.'s Marr 1, 31-3-17, dr hard sand 3026 ft.

VENTURA—Federal Oil Co.'s Sexton 1, td 4460 ft, pulling 18-in cas to repair.

MISCELLANEOUS
FRESNO COUNTY

JOAQUIN RIDGE—Cates-Allen Oil Co.'s 1, 7-19s-15e, rig.

JACALITOS HILLS DIST.—Currency Pet. Co.'s 14-1, 14-21-14, redr 175 ft, td 250 ft.

COAOLINGA—Pet. Securities Co.'s Gatchell 1, 20-20-16, fdn; Ladd 1, 28-20-16, 1000 ft, 18 5/8-in cas cmt 1000 ft.

WESTHAVEN—Shell Oil Co.'s Boston Land Co. A, 24-19-18, coring 2510 ft; Boston Land Co. B, 26-19-18, coring 2700 ft; Boston Land Co. C, 27-19-18, coirng 2210 ft; Boston Land Co. D, 17-19-19, coring 2015 ft; Boston Land Co. E, 6-10-18, rig.

KINGS COUNTY

DEVILS DEN—H. B. Porter's 9-24-17, rig rty.

MENDOCINO CO.—Twin State Oil Co.'s Soldani 1, 14-12n-17w, dr 320 ft.

MONTEREY CO.—Marland Oil Co.'s Nacimiento 1, 32-24-11, 5955 ft, milling over fsh. Shell Oil Co.'s Dudley 1, 15-22-9, dr 3425 ft. Standard Oil Co.'s Piedmont 1, grading roads.

POLE CANYON—Union Oil Co.'s Paige 1, 8-22-8, dr brown shale 1012 ft.

WESTERN SAN LUIS OBISPO CO.—Midwest O. & R. Co.'s Porter 1, 34-31-15, 778 ft, 15½-in cas cmt 774 ft. Panorama Oil Co.'s 1, 7-31-21, dr hard brown shale 3940 ft. Paso Robles Oil Synd.'s Emerick 1, dr brown shale 2225 ft. Pismo Dome Oil Co.'s 1, 5-32-13, dr sandy shale 310 ft. Texas Pacific Coal & Oil Co.'s Dutton 1, 25-32-14, dr brown shale 1868 ft. Union Oil Co.'s Russ 1, redr 3668 ft, td 3698 ft; Chandler 1, 12-32-15, td 3564 ft, making up 4-in dr pipe.

KANSAS

STEPHENS COUNTY—Trees Oil Co.'s Candy 1, sw ne sw, 3-35-38w, td 500 ft, mvg in rotary.

SUMNER COUNTY—Davidson et al's Strickland 1, sw se, 12-35-1w, rig.

STEPHENS COUNTY—W. Sidwell et al's Kelly 1, sw ne, 16-34-38w, sd 1310 ft.

BARBER COUNTY—Skelly's Temple Ranch 1, sw ne, 13-34-15w, dr 370 ft.

HARPER COUNTY—Slick's Miller 1, sec, 13-34-5w, dr 1500 ft.

SUMNER COUNTY—Morgan & Carey, Hawkins 1, sw se, 9-34-1e, dr 200 ft. Mid Continent's Clark 1, sec, 31-34-3w, ru. Shell's Armstrong 1, nec, 12-33-1e, rig.

BARBER COUNTY—Barbara Oil Co.'s Angel 1, c nw ne, 14-33-13w, cmt 8-in cas 4486 ft. Robertson et al's Powell 1, c se se, 11-32-10w, rog.

HARPER COUNTY—Slick's Thompson 1, nwc, 10-32-6w, dr 1700 ft.

COWLEY COUNTY—J. B. Markey's Tatum 1, se sw, 11-31-6e, sd 500 ft. Marland's Hiatt 1, sw ne, 8-31-6e, hfw Siliceous lime 3171-78 ft.

BARBER COUNTY—Allison & Fitzwilliams' Morrise 1, c nw se se, 9-30-12w, dr 3510 ft.

COWLEY COUNTY—Landon & Slick's Daniels 1, ne se, 6-30-5e, dr 750 ft.

KINGMAN COUNTY—Gypsy's Kincaid 1, ne nw, 18-29-5w, wx 4365-73 ft, hfw, dr 4380 ft.

SEDGEWICK COUNTY—Johnson & Marshall's Roy 1, c ne se sw, 23-29-1w, 2340 ft; Lario Teachoiff 1, ne sw, 27-19-1w, sd 2035 ft. Sullivan et al's Shelly 1, c nw ne se, 32-29-2e, run 5-in cas 3563 ft.

BUTLER COUNTY—Empire's Parks 1, ne nw, 35-29-4e, spd.

PRATT COUNTY—Jones & O'Haver's Lunt 1, csw nw, 15-28-14w, fsg cas 2540 ft.

SEDGWICK COUNTY—Marland and Amerada's Sensroth 1, nwc, 25-28-4w, ru. Magnolia's Wise 1, nwc, 36-22-1w, wx 3805-90 ft, hfw, d and a. Kellar & Lewis' Buckles 1, nw se, 3-28-1w, fsg 975 ft. Kyle et al's Pinney 1, c sw nw se, 29-28-1w, spd and sd. Shawver et al's Scott 1, c se sw sw, 10-28-1e, hfw, 3120-28 ft, sd 3136 ft. LaFont et al's Carlton Bros. 1, c se se sw, 24-28-1e, dr 1685 ft.

KIOWA COUNTY—Wilcox O. & G. Co.'s Woodward 1, nec, 35-27-17w, sd 3885 ft.

SEDGEWICK COUNTY — Prairie-Slick's Rosenhagen 1, c sw se ne, 33-27-4w, dr 4171 ft. Miller & Wentz' Shaeffer 1, nw ne, 9-27-2w, dr 3500 ft. Hammond & Stout's Roeder 1, sw nw, 32-27-2w, fsg 3110 ft. Blankenship & Washoma's Tuttle 1, sw nw, 1-27-1e, d and a. C. B. Davis' Kincaid 1, nec, 14-27-1e, ru. Lario's Calkins 1, sw se, 7-27-2e, dr 1350 ft. E. W. Marland's Huggins 1, c se nw sw, 30-27-2e, 12-in cas 1440 ft.

GREENWOOD COUNTY—F. Konkay et al's Rock 1, ne nw ne, 7-27-12e, spd.

RENO COUNTY—Austin Drlg. Co.'s Strickey 1, swc nw, 12-26-5w, dr 2990 ft.

SEDGEWICK COUNTY — Washabaugh's Harrison 1, c nw ne ne, 3-26-2w, dr 2010 ft. Boyle et al's Sandusky 1, c nw ne se, 34-26-1w, spd. Kroder et al's Harden 1, sw nw sw, 20-25-1e, sd 1100 ft. Simmons & Canary's Scott 1, ne nw ne, 22-26-1e, dr 2775 ft. Burnett's Davidson 1, c nw nw sw, 27-26-1e, sd 2668 ft. Twist et al's Armstrong 1, ne nw, 28-26-1e, spd and sd. Producers Oil Co.'s Jones 1, c sw ne se, 31-26-2e, sd 3505 ft.

BUTLER COUNTY—Arkansas Nat. Gas Co.'s Campbell 1, sec, 9-28-3e, ru. Lario's Gorden 1, nwc, 15-26-3e, rig.

SEDGEWICK COUNTY—Empire's Henderson 1, swc, 35-25-4w, dr 3800 ft, hfw, 2790 ft. Twist et al's Joseph 1, 4-25-1w, sd 1980 ft.

BUTLER COUNTY—White Eagle's Bacholder 1, swc, 17-25-3e, dr 2650 ft.

GREENWOOD COUNTY—Ward-McGinnis' Anderson 1, ne nw sw, 13-25-10e, rig.

RENO COUNTY—Skelly's Birkett 1, ne sw, 30-24-7w, rog.

HARVEY COUNTY—Independent & Reserve's Moulds 1, c ne, 7-24-1w, ur 8-in cas 2206 ft. Jolly & Ogg's Randall 1, nec 11-24-1w, sd 3444 ft. Payne et al's Ady 1, ne nw se, 16-24-1e, ru. Patton et al's Buning 1, cse sw ne, 18-24-2e, td 3507 ft, d and a.

BUTLER COUNTY—Crawford et al's Thompson 1, nw sw, 2-24-3e, dr 1895 ft.

HARVEY COUNTY—Rosenthal et al's Ingalls 1, c nw sw, 24-33-3w, ur 8-in cas 2950 ft. McCulloch's Prouty 1, nw sw, 3-23-1w, fsg tools, td 2020 ft. Jolly & Ogg's Hupp 1, se ne, 22-23-1w, sd 3220 ft. Margaret Gay Oil Co.'s Grouse 1, nw ne nw, 29-33-1w, sd 3012 ft.

HODGEMAN COUNTY—Phillips' Houseman 1, c nw ne ne, 30-22-22w, dr 385 ft.

RENO COUNTY—Perry et al's Oswald 1, ne ne se, 30-22-5w, td 4058-72 ft, hfw, d and a.

HARVEY COUNTY—Roth & Fauret's Bombrowsky 1, nwc, 26-22-1e, fsg 2415 ft. Prairie & Slick's & Connell Oil's Gatz 1, nw se, 30-22-1e, sd 3506 ft.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne, 31-21-16w, sd 1560 ft.

McPHERSON COUNTY—Ted Washabaugh's Vosshell 1, ne ne, 9-21-3w, swedging up. Helmerich & Payne's Rosen 1, c ne se sw, 23-21-2w, ur 18-in cas 3027 ft; Klassin 1, se ne ne, 14-11-1w, dr 1880 ft.

MARION COUNTY—Holworth et al's Skiles 1, se nw nw, 30-21-3e, ur 8-in cas 2655 ft.

RICE COUNTY—Niggins & Steinbuble, Shurr 1, ne sw, 21-20-10w, hfw 3085-95 ft sd. Mid-Kansas' Kuns 1, c se sw, 11-20-5w, rig.

McPHERSON COUNTY — Slick-Pryor & Lockhart's Gratten 1, c ne nw nw, 34-20-3w, ur 10-in cas 2150 ft. Tatlock et al's Meyer 1, c sw sw ne, 32-20-1w, dr 3110 ft. Lario's Diener 1, se sw, 10-19-1w, lcn.

RUSH COUNTY—Danciger O. & R. Co.'s Pinonka 1, c ne sw ne, 17-19-17w, fsg 3540 ft.

MARION COUNTY—Skelly's Hehl 1, nw ne, 11-20-4e, hfw, td 2649 ft, d and a.

RICE COUNTY—Allison & Fitzwilliams' Poland -, ne sw ne, 36-19-8w, cellar. Millworks' Cain 1, se, 29-19-7w, rog.

McPHERSON COUNTY — McPherson's Chindberg 1, c nw nw, 18-19-2w, dr 2932 ft. Perry et al's Wade 1, c se, 20-19-4w, lcn.

MARION COUNTY—Moore et al's Miller 1, nec, 26-19-1e, wx 3295-3330 hfw, Silecus lime, 3364-85 ft, sd. Empire's Scully 1, c sw ne ne, 28-19-2e, 3132-47 ft hfw, d and a. General Utilities' Propp 1, c ne se sw, 8-19-4e, dr 1100 ft.

LANE COUNTY—Robinson et al's Dickerson 1, swc nw se, 11-18-27w, 8-in cas 2625 ft.

NESS COUNTY—E. W. Marland's Moses 1, ne se, 7-18-25w, dr 2340 ft. Barnsdall's Lauck 1, c sw, 35-18-21w, dr 4455 ft

RUSH COUNTY—Sinclair's Seur 1, c se nw nw, 8-18-17w, dr 3477 ft.

McPHERSON COUNTY—Marland's Swanson 1, c ne sw ne, 36-18-4w, dr 700 ft. McPherson County Gas Co.'s Rasmussen 1, swc, 8-18-3w, sd 2445 ft.

MARION COUNTY—Shell's Scully 1, nw ne, 34-18-3e, dr 1040 ft.

RUSH COUNTY—Barnsdall's Brock 1, c se se, 21-17-17w, dr 3573 ft. Danciger's Swindt 1, c sw se sw, 22-17-17w, 6-in cas 3587 ft. Central Commercial's Brock 1, ne sw sw, 12-17-16w, spd and sd.

RUSSELL COUNTY—Gobel & Bending's Bartlett 1, c sw sw, 28-17-15w, sd 1190 ft.

ELLSWORTH COUNTY—Texas' Sherman 1, ne sw, 16-17-8w, dr 400 ft.

LANE COUNTY—Blankenship Pet. Co.'s Shaeffer 1, nec ne, 24-16-28w, spd and sd.

SALINE COUNTY—Boyle et al's Miller 1, swc se, 21-16-1w, ur 5-in cas 3250 ft.

DICKINSON COUNTY—Prairie's Morgan 1, nwc, 26-16-3e, dr 2070 ft. Milmack et al's Biehler 1, sw ne, 28-16-4e, ur 8-in cas 2319 ft.

ELLIS COUNTY—Rush Oil Co.'s Gatewood 1, nw, 4-15-20w, fsh 2555 ft. Finney & Weimer's Freeman 1, nw se se, 24-15-20w, spd and sd.

ELLSWORTH COUNTY—Templeman's Lanbangagen 1, c sw, 20-15-6w, dr 500 ft.

SALINE COUNTY—Dixie's Muiri, csw se sw, 6-15-2w, sd 2978 ft, 6-in cas 2975 ft. Austin's Olsen 1, c nw sw se, 10-15-4w, spd.

MORRIS COUNTY—Hiatt et al's Blythe 1, nw ne, 35-15-4e, ur 6-in cas 2230 ft.

DICKINSON COUNTY—Cross & Hawky's Manli 1, nec, 12-15-2e, rig.

ELLIS COUNTY—T. C. Johnson's Robbins 1, sw nw, 15-14-16w, sd hfw 3468-78 ft.

RUSSELL COUNTY—Allison & Fitzwilliams' Mahoney 1, nw se, 5-14-12w, ur 6-in cas 3218 ft.

SALINE COUNTY—Kenning-Coastal Co.'s Beal 1, c, 23-14-5w, dr 3920 ft.

ELLIS COUNTY—Brown's Gestner 1, nw sw nw, 13-13-18w, sd 3964 ft, hfw, 3960 ft.

SALINE COUNTY — Kenning-Coastal's Hughes 1, cw½ ne nw, 20-13-4w, spd and sd.

WALLACE COUNTY—Menton & Entyre's Parker 1, c se nw sw, 8-12-41w, rig.

TREGO COUNTY—Mid-Kansas' Ridgway 1, ne sw, 28-12-21w, rig. Day's Guyler 1, c sw ne ne, 36-12-21w, spd and sd.

ELLIS COUNTY—Burger et al's Hadley 1, c sw sw nw, 20-11-17w, dr 2910 ft.

TREGO COUNTY—Day's Unknown 1, c ne nw sw, 2-11-21w, ur 10-in cas 1565 ft.

OSBORNE COUNTY—Jarvis' Jellison 1, sec, 13-10-15w, fsg tools 3577 ft hfw, 3533-77 ft.

OTTAWA COUNTY—Anderson et al's Bank 1, ne nw, 29-10-2w, Viola 3543-3610 ft hfw, d and a, td 3755 ft.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw, 19-10-17e, ru and sd.

ROOKS COUNTY—Prairie's Gick 1, c se, 22-9-18w, dr 3905 ft. Burford & Brimm's Toxa 1, ne sw se, 22-9-17w, spd and sd. Krueger et al's Steis 1, c nw se sw, 12-9-15w, spd and sd.

GRAHAM COUNTY—Gulf Coast's Johnson 1, swc sw se, 27-8-15w, sd 3925 ft.

SHERMAN COUNTY—A. L. Hansen et al's Murray 1, ne se nw, 22-7-40w, sd 3035 ft.

OSBORNE COUNTY—Phillips' Grieve 1, nw se ne, 6-7-12w, dr 650 ft.

RILEY COUNTY — Derby-Skow Bros.' Lundstrum 1, ne, 32-7-5e, dr 945 ft.

OSBORNE COUNTY—Trees' Payenter 1, c ne se se, 22-6-15w, sd 3100 ft. Mid-Kansas' Boyce 1, se nw, 8-6-13w, dr 650 ft.

RILEY COUNTY—Gray et al's Smith 1, ne se, 30-6-6e, dr 1200 ft.

SMITH COUNTY—Phillips' Clydesvale 1, se nw, 23-5-14w, dr 1150 ft.

WASHINGTON COUNTY—McCool & Vincent's Linn 1, nw ne, 27-4-3e, dr 2300 ft.

MARSHALL COUNTY—Irwin et al's Cooper 1, ne nw, 10-3-7e, sd 2240 ft.

PHILLIPS COUNTY—Watsonian & British American's Weiman 1, c sw sw, 34-2-19w, dr 3020 ft.

OKLAHOMA

WOODS COUNTY—T 28n, R 16w, Sec. 14, Peerless et al's Cromwell 1, c sw se, rig bldg. T 27n, R 16w, Sec. 33, Sinclair O. & G.'s Share 1, c ne sw, dr 4526 ft.

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros.' Forbes 1, nec se nw nw, sd 425 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent & Nat'l Union's McNeal 1, nw ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu-Vi-Bar et al's 1, sec sw, ts 5003-19, (show gas dr 5616 ft).

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollmer 2, nec se ne sw, lost tools, 5640 ft sd.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller et al's Copenhover 1, nwc, spd and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma's Acre 1, swc ne, rig.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, hfw 4730-4800 ft, dr 5556 ft.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Billy Oil Co.'s Wyatt 1, c se, sd 3690 ft. T 23n, R 17w, Sec. 2, John Rarran's Belva 2, csl sw se, sd 1387 ft.

MAJOR COUNTY—T 23n, R 16w, Sec. 4, Wilson et al's Creech 1, nec sw, sd 510 ft.

NOBLE COUNTY—T 22n, R 1e, Sec. 24, Gypsy's Dailey 1, swc ne ne, dr 2900 ft.

WOODWARD COUNTY—T 21n, R 21w, Sec. 25, Sharon's Elmore 1, swc, rig blown down, td 3025 rt. T 21n, R 19w, Sec. 19, Burgoyne Bros.' Merklin 1, swc se ne, sd 1910 ft.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Horton 1, c ne ne, spd and sd.

NOBLE COUNTY—T 20n, R 1w, Sec. 26, Magnolia's King 1, sec sw, dr 1700 ft.

BLAINE COUNTY—T 19n, R 1w, Sec. 13, Washoma's Phillips 1, c nw sw, dr 2100 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey & Consolidated Drlg Co.'s Quier 1, sec sw, sd 3970 ft.

KINGFISHER COUNTY—T 16n, R 7w, Sec. 6, Gault-Brown 1, c nw se, (owdd), show gas 5088-5126 ft, testing 5195 ft. T 16n, R 6w, Sec. 27, Crawford & McKenna's Sturgeon 1, nec sw, sd 4895 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears' Piatt 1, swc nw, sd 3223 ft.

CIMARRON COUNTY—T 5n, R 5e, C. M., Sec. 22, Magnolia's School Land 1, c se ne, rur 4500 ft.

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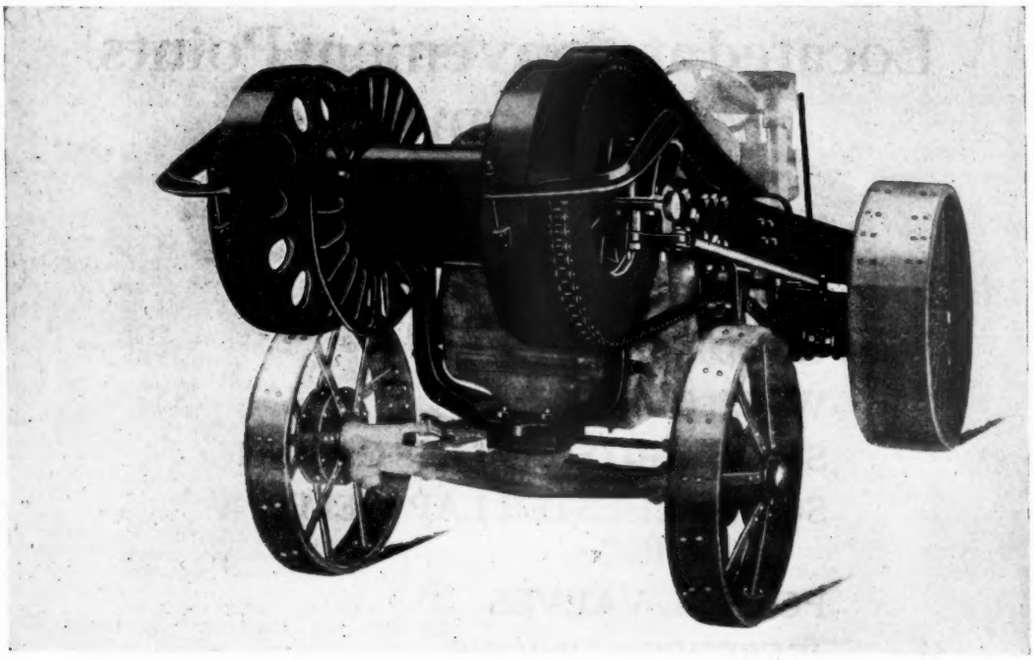

Performance data that really proves performance

30 Months of continuous use:
Total of over 1000 Rod Jobs.
Total of over 250 Tubing Jobs.
Average of 35 Sucker Rod Jobs per month.
Average of over 8 Tubing Jobs per month.

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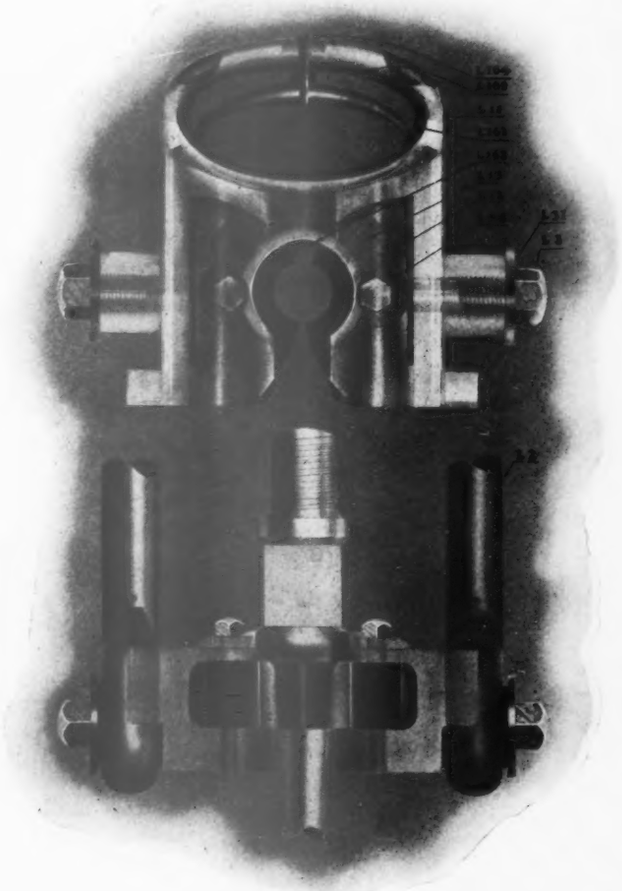

This elevator embodies simplicity in construction and absolute safety in operation. Entirely FOOL PROOF. The weight of the sucker rods rest entirely on the latches which in turn distribute the load throughout the entire body by means of a bearing member inserted between the latches and inner side walls of elevator body.

Only two wearing parts—easily replaced at nominal cost . . . light in weight—strength obtained by economic distribution of material . . . full floating latches will not bend or break—will not bend rods under any pulling method. Body and latches alloy steel—heat treated.

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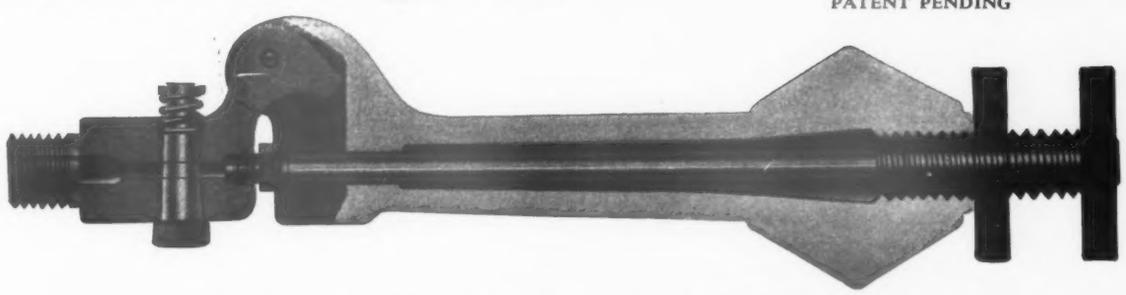

The safety feature—consisting of a shut off valve which closes the hole in the boiler connection, and prevents the escape of steam or water when it is necessary to remove or replace the valve seat. But one wearing part, the Valve Seat Plug, which will last indefinitely, but can be replaced at very low cost.

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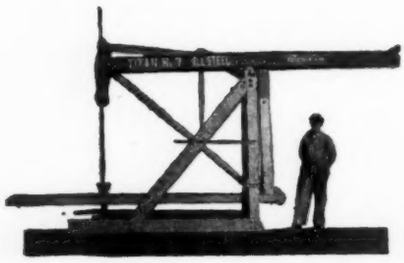

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OUR electric Pumping Jack is so easy running and so finely balanced that a small motor pulls a tremendous load without effort or vibration. No other jack built does as much work with as little power, and repairs and replacements are almost unknown. It has an absolutely straight lift, without vibration or side thrust. Completely enclosed and weatherproof. Requires no house.

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JENSEN JACKS

TIMKEN BEARING EQUIPPED

TEXAS COUNTY—T 1n, R 15e, C. M., Sec. 25, Skaer et al's Hitch 1, nwc, sd 250 ft.

OSAGE COUNTY—T 26n, R 7e, Sec. 13, Wrightman Pet. Co.'s 1, sec nw, wx 2876-2934 hfw, d and a; Sec. 19, Peters et al's 1, sec, rigging up; Sec. 23, White Eagle 1, nwc ne se, rigging up; Sec. 33, Duffield & Howard 1, swc nw, dr 1300. T 23n, R 10e, Sec. 32, Union Oil & Mining Co.'s 1, sec nw, dr 1545 ft.

LINCOLN COUNTY—T 17n, R 5e, Sec. 7, Mote & Wheeler et al's McLaughlin 1, sec nw nw, rig. T 16n, R 4e, Sec. 15, J. V. Bailey's House 1, c ne se, ts 4616-31 ft, water plugging. T 16n, R 6e, Sec. 19, Flynn and Morgan's Finely 1, swc, wx 4210-20 ft hfw, sd. T 14n, R 6e, Sec. 33, Magnolia's Mitchell 1, nec, dr 4075 ft. T 12n, R 3e, Sec. 29, Phillips' Robinson 1, sec nw, rig.

OKFUSKEE COUNTY—T 12n, R 7e, Sec. 29, Barnsdall's Soweka 1, nec sw, Wilcox 4843-55 ft, water pb to 3935 ft, show oil and water, abn.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, sand 5556-59 ft, shot 240 qts, fsg.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion's Sanders 1, nwc ne sw, show 2M gas at 1800 ft, sd 2692 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O. & G. Co.'s Murray 1, swc, sd 3950 ft, several shows of gas, setting 5-in csg.

OKLAHOMA COUNTY—T 12n, R 2w, Sec. 30, Magnolia's Noble 1, nwc sw sw, dr 6255 ft. T 12n, R 1w, Sec. 19, Mid-Kansas & Ramsey's Trosper 1, nec nw, dr 5770 ft.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 6, Superior et al's Carolina 1, sec, bldg rig.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 12, I. T. I. O. et al's Chatkey 1, swc ne, rog. T 10n, R 7e, Sec. 20, Gypsy's Harjo 1, nwc ne ne, td 3963 ft hfw, sd.

POTTAWATOMIE COUNTY—T 8n, R 3e, Sec. 9, Cal Cul's Wilson 1, nwc ne nw, dr 1940 ft. T 8n, R 5e, Sec. 33, Phillips & Furman's Raper 1, swc se, dr 4435 ft, 3000 ft water.

HUGHES COUNTY—T 8n, R 11e, Sec. 25, McGee Bros.' Smith 1, sec sw, dr 3415 ft.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Sooner's Vandever 1, nec nw sw, sd 3120 ft.

POTTAWATOMIE COUNTY—T 7n, R 3e, Sec. 15, Amerada et al's Vineyard 1, nwc ne ne, rur; Sec. 19, Frank Moore's Fundis 1, sec ne, lcn. T 6n, R 3e, Sec. 11, Shaffer & Margay's Adams 1, nec, dr 2630 ft.

SEMINOLE COUNTY—T 6n, R 6e, Sec. 8, E. L. Harris' Harjoche 1, sec ne se, lcn. T 6n, R 7e, Sec. 9, Gypsy's Thomas 1, sec nw, td 4217 ft water. T 5n, R 7e, Sec. 3, I. T. I. O. et al's Factor 1, swc ne se, wx 4768-78 ft water.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, ur 5-in 3910 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 23, Independent's Hampton 1, nec, dr 3210 ft.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key's Tall 1, c nw nw, dr 2406 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, J. S. Cosden's Richardson 1, nwc ne ne, dr 1900 ft. Sec. 7, McGinley & Sigler's Wilsey 1, nwc se se, dr 1220 ft. T 2n, R 8e, Sec. 10, E. W. Whitney's Miller 1, sec ne, sd 202 ft. T 1n, R 11e, Sec. 10, I. T. I. O. Co.'s Cook 1-A, sec sw nw, dr 7675 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt's Wellman 1, c se, sd 100 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Bucy & Stone's Williams 1, c sw, lcn. T 11n, R 26w, Sec. 4, L. C. Hivick's Davis 1, c nw ne, 10-in at 1240 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd 150 ft.

BECKMAN COUNTY—T 8n, R 22w, Sec. 20, Carson et al's Denby 1, swc se ne, sd 1535 ft.

GREER COUNTY—T 6n, R 24w, Sec. 17, I. T. I. O. et al's Fee 1, c ne, dr 1885 ft.

CADDO COUNTY—T 6n, R 13w, Sec. 8, Abernathy & Brown's Horton 1, sec, 535 ft. T 6n, R 10w, Sec. 26, English Drlg. Co.'s Garner 1, nwc sw, drlg 1600 ft.

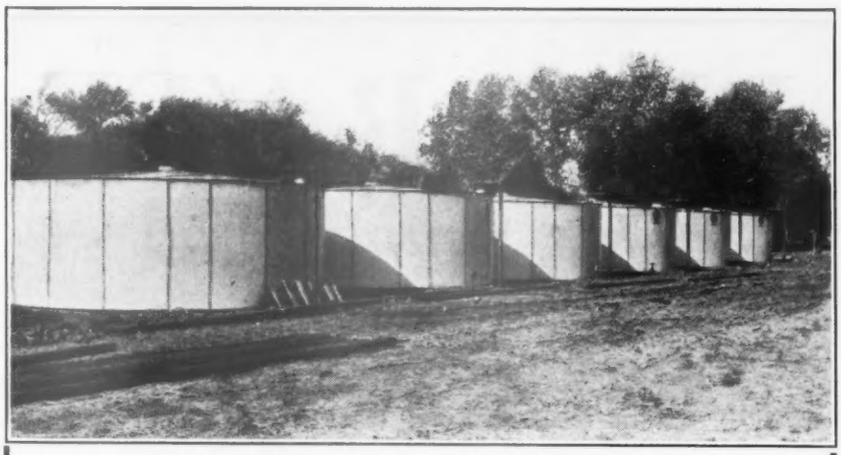
HARMON COUNTY—T 4n, R 26w, Sec. 8, S. M. Stauffer's Caftleman 1, nwc se, sd 625 ft.

JACKSON COUNTY—T 1n, R 20w, Sec. 4, Houseman et al's Northington 1, nec, sd 2020 ft.

TILLMAN COUNTY—T 1n, R 17w, Sec. 13, Allen Bros.' Howell 1, nwc se, sd 835 ft.

COTTON COUNTY—T 1s, R 11w, Sec. 24, Bridwell et al's Crown 1, sec sw sw, dr 2326 ft.

TILLMAN COUNTY—T 4s, R 14w, Sec. 16, Ridgeway et al's Barnes 1, nwc ne, lcn, abn.



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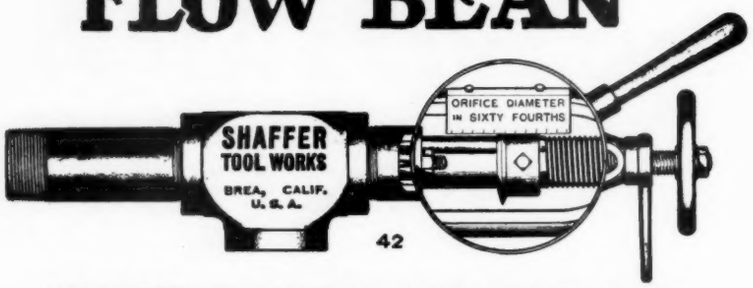

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COTTON COUNTY—T 4s, R 9w, Sec. 31, Amerada's Delana 1, sec nw nw, dr 3016 ft.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, sd 2275 ft.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smith-Kinsley's Lane 1, sec nw, dr 2250 ft.

CARTER COUNTY—T 4s, R 1e, Sec. 32, Leonard Woodruff's Zellner 1, nec nw se, water 1830-55 ft sd. T 4s, R 2e, Sec. 32, Tex.-Okla. Drlg. Co.'s Anderson 1, sec ne se, sd 420 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. C. Endicott et al's Craig 1, c nw ne, sd 1500 ft.

WOODWARD COUNTY—T 23n, R 17w, Sec. 23, The Prairie & Transcontinental's Wilbur 1, nec, stand 4300 ft.

CLEVELAND COUNTY—T 10n, R 2w, Sec. 8, Prairie & Slick's Sudik 1, c ne ne, dr 6875 ft.

MOUNTAIN STATES

COLORADO

ADAMS—N. M. Slatt's Hills 1, se 27-3s-64w, dr 435 ft.

ARCHULETA—Juanita Oil Co.'s Harvey 1, sw 4-32n-3w, stand 725 ft.

BENT—Marland Oil Co.'s Piep Springs 1, se 27-29-49, run 6¼-in at 4410 ft.

DOLORES—Transcontinental's Glade 1, nw 30-41-16, fsg 4005 ft.

ELBERT—Belmont Oil Co.'s Maher 1, sw 4-6s-59w, dr 3500 ft.

JACKSON—Midwest's Rich 21x, nw 9-6-8, dr 615 ft. P. & R.'s Henderson 1, 2-6-81, dr 1990 ft.

JEFFERSON—Ruby Hill O. & G. Co.'s Braden 1, se 14-4s-69w, run 6¼-in 3280 ft.

LAS ANIMAS—Parker Club & Kinney-Coastal, 4-28-68, sd 3016 ft.

LARIMER—Barrows et al, 7-11s-68w, sd 2000 ft. Five Square O. & G. Co.'s State 1-A, sw 16-4n-69w, showing oil and gas at 3758 ft, prep to test.

LA PLATA—Royal P. & R.'s Red Mesa 1, 27-33-12, dr 860 ft. Detroit Oil Ass'n's Olbert 1, sw 9-35-12w, dr 1855 ft.

LINCOLN—Kelly Oil Co.'s State 1, ne 36-14-75, dr 2139 ft.

MESA—High Line Oil Co.'s Hoel 1, ne 23-8s-104, sd 2717 ft.

MOFFAT—McLaughlin et al's Wms. 1, 2-3-91, carry 6¼-in at 3877 ft. McCormick et al's Sales 1, se 28-4n-92, sd 35 ft.

MONTROSE—Uncompaghre O. & G. Co.'s Colorado Title & Trust Co. 1, 27-50-10, dr 2070 ft.

PUEBLO—Beulha Dome Oil Co.'s Hedland 1, sw 72-23-57, dr 240 ft. Boone O. & G. Co.'s Ritter 1, nw 33-18-60, fsg 3037 ft.

RIO BLANCO—White Eagle's Fordham 1-A, sw 9-2-96, dr 1500 ft. Texas Prod.'s Potter 1, sw 30-2n-96w, ready to spud.

ROUTT—Midwest 10, nw 4-7-86, dr 460 ft.

YUMA—Major Pete's Black Wolf 1-A, sw 7-2-43, carry 12½-in at 1370 ft. Phillips' Andrews 1, nw 3-2-42, dr 2100 ft.

WELD—Platte Valley Pete Corp.'s Patterson 1, sw 23-8n-61w, sd 4400 ft.

MONTANA

BROADWATER—Signal Hill O. & G. Co., nw 7-3n-1e, setting cas at 2400 ft.

CARBON—Ohio Oil Co.'s Northern Pacific 2, 11-7s-21e, dr 2430 ft.

CARTER—Montasota Oil Co.'s Zimmerman 1, 7-8s-58w, dr 730 ft.

CASCADE—U. S. Pete Co.'s Miller 1, 8-21-4w, reaming to test 1100 ft; Lone Star, 13-21-3e, dr 850 ft. Eden O. & G. Co., sw 27-18-4e, resumed at 1290 ft.

CHOTEAU—California Synd.'s Walker 1, ne 18-23-6e, abn 1485 ft. Tip O'Neil, nw 16-25-5w, dr 500 ft.

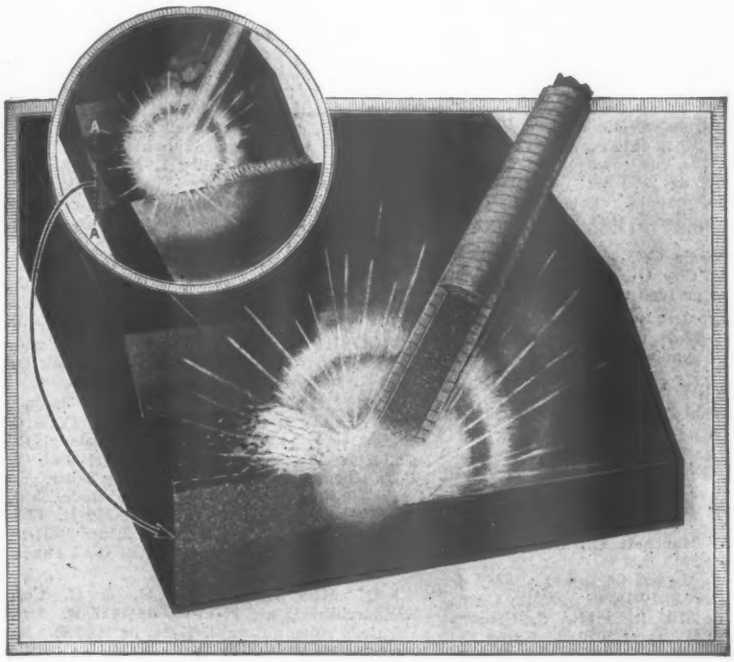
FERGUS—Melton Corp., sw 24-21n-17e, fsg 2700 ft. Melton Corp.'s Woodhawk 1, 20-23-20, sd 350 ft.

GALLATIN—California Co.'s Ringling 1, 35-5n-7e, dr 1123 ft.

GLACIER—Jos. Drumheller et al's Yunck 1, nw 1-34-6w, dr 1875 ft.

HILL—Jones Oil Co.'s Brown's Coulee 1, nw 32-34-14e, dr 660 ft.

LIBERTY—Sunburst O. & R. Co.'s Bears Den 1, nw 17-36-6e, prep to test at 2410 ft. Square Deal Pete Co.'s Johnson 1, se 1-32-7e, ream pipe at 336 ft. Western Natural Gas Co.'s Townsend 2, 22-37-4e, spd. Cypress Pete Co., 36-28-6e, ream 6 5/8-in from 2470 to 2770 ft.



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CLEVELAND CHICAGO DALLAS LOS ANGELES

LAKE—Missoula-Flathead Oil Pools Co., nw 31-21-20, making repairs.

PETROLEUM — Minnesota-Flatwillow Oil Co. 1, sw 5-12-25e, wait cem set, td 1318 ft.

PHILLIPS—Big Dome O. & G. Co.'s Bloomberg 1, ne 1-32n-32e, run cas 2455 ft.

PONDERA—Miller Bros.' Bruins 1, ne 17-28-1w, rig. Texas Pacific's Acme 1, 15-25-1w, dr 1300 ft. Adams Co.s Trustee sw 29-29-1w, dr 1200 ft.

RICHALDN—D. J. Carter, 11-22n-59e, mvg in.

SWEETGRASS—H. F. Stewart, 5-2n-22e, ream 3208 ft to set cas at 3315 ft. Carter Oil Co.'s Six Shooter 1, 17-3n-19e, mvg in materials.

TETON—Texas Pacific Coal & Oil Co.'s Campbell State 1, se 10-27-5w, dr 2310 ft. Ohio Oil Co.s State 1, nw 16-24-2, dr 750 ft.

TOOLS—Monalta Oil Co., Ltd's Buckley 1, se 1-37-4w, dr 1400 ft, corrected depth. Anaconda Pete Co., ne 19-36-2e, pipe trouble. Mahn et al's Lee 1, 10-31-1w, ur cas 1900 ft.

WYOMING

ALBANY—Midwest Refining Co.'s Diamond Anticline, se 6-20-77, dr 125 ft on rock and iron.

BIG HORN—P. & R.'s Hill 1, 7-57-97, cem at 607 ft; Rand 1, 7-57-97, abn 2836 ft; 3, 24-56-98, dr 2550 ft, td 3756 ft. Ohio Oil Co.'s Easton 1, 36-56-97, dr 2237 ft. Cody Pete's Wilcox 1, 27-57-96, sd 1320 ft.

CARBON—P. & R., 2-19-88, fsg bit 3970 ft, to 4003 ft. C. E. Bivins et al's Baggs 1, 35-13-92, resume 1005 ft. P. & R.'s Greenville 2, 28-21-86, mov in.

CONVERSE—Criterion Oil Co., ne 5-31-70, dr 3300 ft, tools sidetracked.

FREMONT—P. & R.'s Muskrat 1, 33-34-92, taking tools down 532 ft; Muskrat 1, 1-33-92, taking tools down 510 ft; Kinney-Coastal, 22-3-1, dr 3014 ft. Texas Prod. Co.'s State 1, 36-34-95, dr 375 ft.

HOT SPRINGS—Texas Prod. Co. sw 23-45n-100w, cem 10 in at 2828 ft. Midwest Refining Co., 8, 6-44-98, rigging up. C. F. Robertson et al., se 17-43-92, spd. Gebo Cons., se 32-44n-95w, mvg in.

LINCOLN.—Midwest Ref Co.'s Waterfall 1, 35-22-115, dr 3800 ft; Grey's River 1, 25-37-117, dr 1034 ft. B. E. Taylor et al., 14-24-113w, 15½-in at 105 ft.

NATRONA—Prairie O. & G. Co., Baird 1, 22-31-81, cem 10-in at 1685 ft.

PARK—P. & R.'s Pitchfolk 1, 14-48-102, dr 1295 ft; Midwest's Rosenburg 36, nw 25-85-98, pull 8¼-in at 2887 ft; Rosenburg 1, 26-58-98, dr 220 ft; Ohio's Burlington 1, 21-53-101, dr 400 ft; Montana-Wyoming Pete Co's 28-58-98, mvg in.

SWEETWATER—Mtn Fuel Supply Co's Tucker 1, 18-13-99, cem 8¼-in at 2480 ft; Supply Humphrey's 1, 2-12-101, cem 4033 ft; Otto Arnold's 1, 24-19-104, run cas 3518 ft; Newberger's 1, 13-12-101, dr 1770 ft; Vermillion Oil Co., sw 16-12-100, prep to resume at 620 ft.

SUBLETTE—California Co's Wyss 1, 12-32n-115w, dr 2433 ft.

UINTA—California Co's U/P 1, 7-17n-119w, dr 3192 ft. Park City Oil Co's Christensen 1, 6-15n-113w, stand at 1060 wait for casing.

WESTON—Wyo Drg Synd's 15-44-64, dr 4750 ft. Gose Synd, 28-47-64, prep to resume at 4855 ft. Fiddler Creek Synd's 11-45-64, cav at 950 ft.

NEW MEXICO

CHAVES—Warman et al's 1, sw 23-13-24, sd. Transcontinental's Robbins 1, 1-14s-28e, dr 4090 ft.

DEBACA—Matador Oil Co's State 1, sw 6-4n-20e, dr 2428 ft. Pittsburgh Oil Co's 1, ne 16-1s-27e, sd 4506 ft. Transcontinental's McWorter 1, 6-35-22e, dr 4390 ft.

GUADALUPE—Hanchett Oil Co. 2, 14-8n-24e, tools lost, sd 2403 ft.

LEA—Midwest's Leach 24, nw 15-19-38, dr 110 ft; Lane 31, sw 28-19-30, dr 1900 ft; Capps 31, sw 3-19-38, dr 3705 ft. Midwest's Gregory 22, sw 31-25-37, 30M gas at 3070 ft. Gypsy Oil Co.'s Mattern 1, 24-21-36, sidetr lost tools 3580 ft; Humphreys 1, sw 25-24-36, dr out cem at 3125 ft. Exploration Co.'s Record 1, 26-19-35, td 4556 ft. Morton et al's State 1, ne 32-11-38, fsg 1700 ft. Texas' Sheppard 1, ne 6-26s-37e, 1500-bbl well at 3230 ft; Moberly 1, se 17-26-37, sd 3542 ft; Humphreys 1, sw 18-20-32, sd 3105 ft, sulphur water. Cranfill & Reynolds' Meyer 1, sw 22-24-36, dr 3300 ft; State 1, se 2-21-33, dr 1730 ft. Curtis Dr. Co.'s Nixon 1, 22-18-24, sd 1200 ft. Empire Gas & Fuel Co.'s Closson 1, se 6-22-36, dr 3200 ft. Vacuum Oil Co. 1, 14-17-34, dr 4749 ft. Pueblo Oil Co.'s Lee 1, ne 34-17-29, dr 1100 ft. Ohio Oil Co.'s State -, 9-13-38, dr 260 ft; McGeorge 1, nw 30-20-33, dr 1212 ft. Empire-Henderson et al's Martin 1, ne 28-20s-33e, dr 3750 ft. Buell & Hagen's State 1, ne 13-11s-35e, dr 1705 ft. Marland's Myers 1, sw 17-21s-36e, dr 600 ft; Meyer 1, nw 28-22s-36e, ready to spud; Flint 1, se 29-20s-34e, dr 2700 ft; McCallister 1, se 24-26-36, dr 1660 ft; Wells 1, ne 11-25-36, dr 1905 ft. Shell Pete Corp.'s Terry 1, ne 22-19-38, casing trouble at 1200 ft. Humble O. & R. Co.'s Lindley 1, 23-25-36, dr 2995 ft; Bowers 1, 30-15-38, dr 1530 ft. Cook et al.'s State 1, ne 12-21-33, dr 1000 ft. Rector Oil Co.'s King 1, sw 27-25s-32e, dr 1205 ft. Walker et al's Terry 1, se 10-19s-38e, dr 1200 ft.

McKINLEY—J. W. Haisell's Santa Fe 1, 17-19-9, stand 2050 ft. San Juan Coal & Oil Co. 1, se 27-18n-9w, to run 5 3/16-in 2110 ft. Williams et al's A.T.S.F. 1, sw 19-18n-8w, dr 600 ft.

ROOSEVELT—J. T. Keegan et al's Pepper 1, 6-1s-36e, ready to spud. Smith & Sloan's Lovern 1, se 4-3s-35, dr 3760 ft.

SAN JUAN—Dorothy Oil Co., 29-30-9, crooked hole at 685 ft. Kutz Canon O. & G. Co.'s Day 1, 20-28-10, dr 851 ft. Blackrock Oil Co. 1, sw 11-25-13, sd 1550 ft. Angel Peak Oil Co.'s Kutz Canon 1, 11-28n-11w, fsg bailer, gassing 3100 ft. Greathouse et al's Roderick 1, sw 11-22-14, prep run 6 5/8-in at 700 ft. Childers Dr. & Pr. Co.'s Westwater 2, nw 24-31-18, lower 6 5/8-in casing. Reserve Oil Co.'s Shaffer 2, ne 1-21-14, dr 528 ft.

SAN MIGUEL—Pioneer O. & G. Co.'s Thunderbird 1, nw 14-15-16, dr 1927 ft. Starr Oil Co.'s Adams 1, ne 25-17-16, dr 1900 ft.

SOCORRO—Arnold et al 2, ne 13-6-1, sd 1975 ft.

TORRANCE—Bluhall O. & G. Co., 20-16-10, stand 1800 ft. Sinnock et al's Kutchin 1, ne 13-7-7, td 197 ft, crooked hole. Williams et al's Staplin 1, ne 16-8n-10w, ready to spud.

VALENCIA—Rio Puerco Oil Co.'s N. M.-Ariz. Land Co. 2, nw 13-6-2, wait pipe 3145 ft. Acme Oil Co.'s N. M.-Ariz Land Co. 1, 26-6-3, running 5 3/16-in at 3800 ft.

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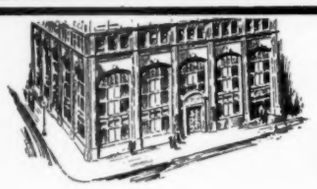

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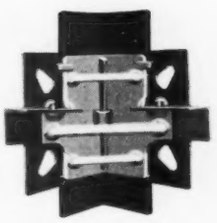

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Discovery of Deep Domes Revises Gulf Coast Potentialities

(*Continued from page* 81)

they will yield oil can be definitely determined only by drilling into them. If they are simply buried hills which have caused anticlines during the building up of the coastal plain, they are probably unimportant, but if they denote a general upheaval, in which the Oligocene formation beneath the Miocene has also been pushed upward, being responsible for the Miocene high, then they may be potential oil fields, or even very deep domes. Examples of Miocene highs of this kind include the prospect just north of Dickinson, Galveston County, and the Cedar Bayou prospect, west of Barbers Hill. Another common type of non-salt dome prospect being revealed by geophysical instruments is the Orange type of field. Both the new field of The Texas Company at Port Neches in Orange County, and the newly opened field of the Gulf Production Company at Hankamer, Liberty County, appear to be of the Orange type of non-salt dome field. Both of those prospects were found by seismograph, Hankamer in 1929 and Port Neches in 1928.

Thus while Sugarland has encouraged the search for deep seated salt domes, Hankamer and Port Neches will probably stimulate further investigation of the geophysical discoveries of the non-salt dome type.

In 1929 the search for new potential oil fields has continued with zest; and counting very new discoveries, concerning which very little information is available, and including both salt domes and areas where other structural conditions exist, there have been approximately 25 geophysical discoveries already in the Gulf Coast during the current year, with about 75 per cent of them in the Texas division of the region.

Although nearly every square foot of ground in the Gulf Coast has been worked at some time by some method and company, and although a high percentage of the usual shallow domes have already been discovered, a large amount of geophysical work is still in progress; and furthermore, a great deal of exploration may be expected in the future, in further checking and rechecking of earlier work, to say nothing of more detailed work on known prospects.

Detailed information on all of the geophysically discovered oil field prospects of the Texas and Louisiana Gulf Coast is included in the accompanying tables.

TABULAR HISTORY OF GEOPHYSICAL DISCOVERIES IN THE TEXAS GULF COAST

Field or prospect—	Location by surveys	Discovery company, method and year		Remarks: Results of drilling; formations and showings found; discussion of importance of area
AUSTIN-WALLER COUNTY LINE				
San Felipe	S. F. Austin Nos. 9, 10, 11; John; Wm. Coop	Gulf Prod. Co. Seismic	1927	Only test of area, Gulf's Jackson 1, late in 1928 set casing on top of cap rock at 3230 feet, and well flowed sulphur water, with slight oil show. Abandoned in cavity at 3350 feet.
BRAZORIA COUNTY				
Allen	S. McNeal J. & W. McNeal T. & W. Alley	Shell Pet. Corp Torsion	1925	First test, Roxana (now Shell) Pet. Corp.'s Allen 1, hit cap rock at 822 feet in fall of 1925, proving dome. Discovery well, Allen Bernard River 1, came in flowing 700 barrels 31 gravity oil at 5141 feet. Four out of 11 tests have produced oil; but wells soon quit flowing, and as yet the small production has not justified drilling to the necessary great depths. Allen Dome production in 1928 amounted to 17,450 barrels.
Clemens	W. Cummins J. McNeal	Shell Pet. Corp Torsion	1925	One test hit cap rock at 780 feet after going through oil sand at 535 feet. Various good shows encountered but no production yet, although a dozen tests have been drilled.
Cedar Lane		McCollum Torsion	1928	Was for a time considered a fair prospect, but has since been condemned.
Alvin	Thos. Spragin W. Connar	? Torsion	1928	Various companies were interested in this area in 1928, and used different geophysical instruments. Structural condition believed to exist. No drilling has been done.
Sandy Point	Jno. W. Hall Nos. 10 and 11, West End	Gulf Prod. Co. Torsion & Seismic	1929	Recent discovery; undrilled. Located five miles east of Nash Dome, less than a mile east of Brazos River.
Devil's Elbow	S. F. Austin 5¼ League	Vacuum Oil Co. Seismic & Tors'n	1929	Recent discovery; undrilled. Located about five miles northeast of Clemens Dome.
Danbury	Henry Austin East end	Shell Pet. Corp. Seismic	1929	Very recent discovery; undrilled.
CHAMBERS COUNTY				
Lost Lake	E. H. Wallis	Pure Oil Co. Seismic	1927	First test bailed some oil at 3605 feet, but did not produce commercially; later hit cap rock at 3951 feet. Six tests have been completed: five were abandoned in cap rock, and one, Mayes 1, was completed as 40,000,000-foot gas well at 2701 feet. Two tests are now drilling.
Anahuac	Vincent Barrow Jas. T. White	Gulf Prod. Co. Seismic	1928	Gulf drilled one test, Wilborn 1, which was abandoned at 5775 feet, without having had any important showings.
Smith Point	Edward Branch	Humble O. & R. Co. Seismic	1928	Considered a good prospect, but undrilled as yet.
Salt Cedars	Key West	Petty Pet. Co. Torsion	1928	Undrilled.
COLORADO COUNTY				
Altair	Whiting Osborne Jas. Cook N. W. B. Dewees	Marland Prod. Co. Seismic	1925	Marland originally shot with seismograph, but later dropped leases. In 1927 Gulf and Humble became interested in area and did geophysical work. Humble has drilled numerous core tests there.
FORT BEND COUNTY				
Long Point	H. & T. C. Nos. 67, 68, 101, and 11	Gulf. Prod. Co. Torsion	1924	Gulf has completed 54 tests here. All were dry holes. Many were shallow, but some were from 3000 to 4000 feet deep. Salt rises to within 800 feet of surface. This is apparently a fair commercial sulphur dome, although sulphur is not being exploited. One oil test now drilling.
Moore's Field	L. Burknap German Emigration	Gulf Prod. Co. Seismic		
Moore's Field	L. Burknap German Emigration	Gulf Prod. Co. Seismic	1924	Also known as Orchard Dome. Fifth test was discovery well, making 2000 barrels 34.5 gravity oil at 3702 feet. In fall of 1928 one well came in for 700 barrels 22.5 gravity oil at 2850 feet. Gulf is now drilling its neneteenth test. Among the 18 already completed five were producers. Field's production in 1928 was 45,700 barrels; in 1927 it was 21,150 barrels.
Sugarland	Wm. Stafford Wm. Little E. Alcorn	H. C. Cockburn Torsion	1927	North American Exploration Co. made torsion balance survey for Cockburn. Cockburn sold to Humble, whose first test was 800-barrel well at 3536 feet. It was completed in March, 1928. About 25 tests have been completed, one as a gas well and all the others as oil producers. Production is from top of the dome, which is deep as compared with most Gulf Coast domes. In 1928 Sugarland produced 389,750 barrels. At beginning of 1929 daily production was around 7000 barrels, and for several months it has been over 10,000 barrels daily, making Sugarland third largest producing field of Gulf Coast.

(Continued on page 206)

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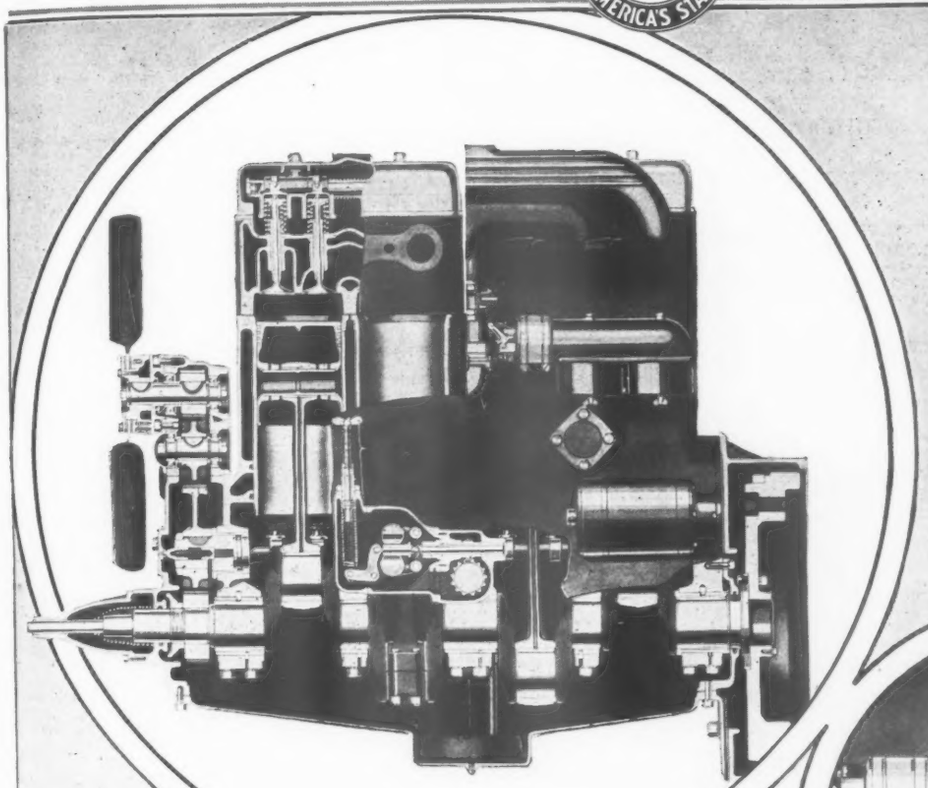

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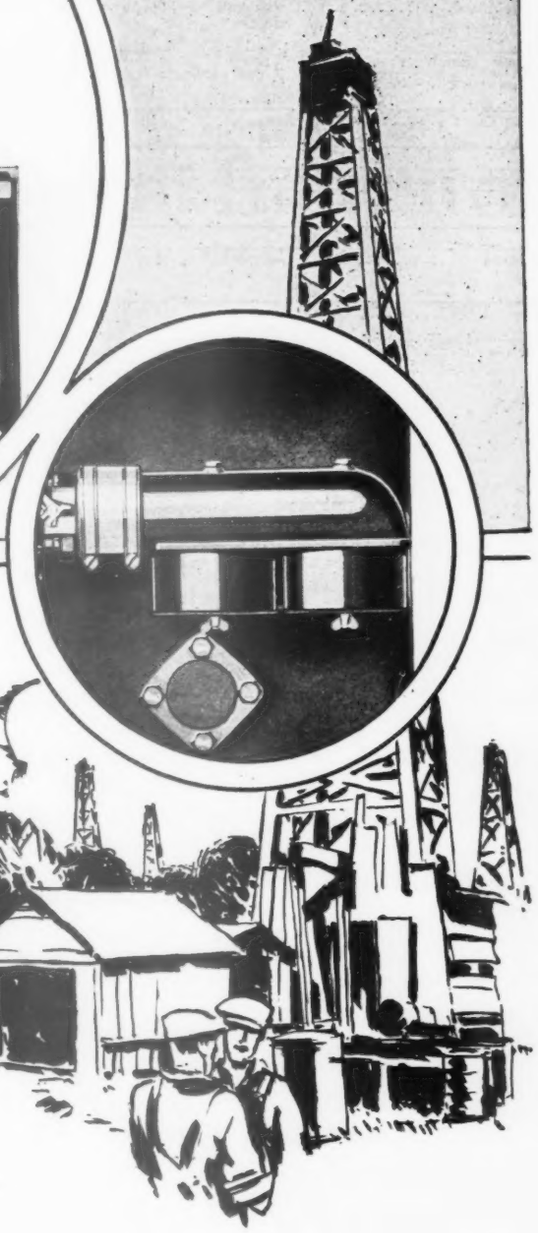

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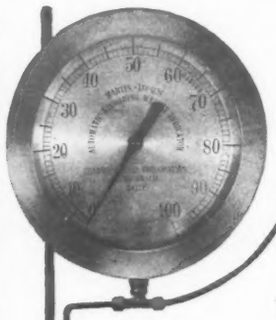
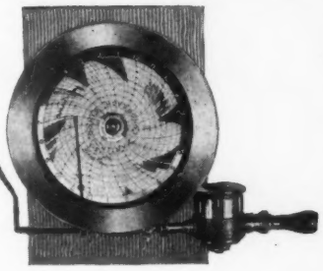
Field or prospect—	Location by surveys	Discovery company, method and year			Remarks: Results of drilling; formations and showings found; discussion of importance of area
Needville	H. & T. C.	Meyer-SoRelle	Torsion	1928	Seismograph did not confirm dome indication by torsion balance. It was assumed that if a dome is present it is probably more than 6000 feet deep. On that assumption South Texas Petroleum Company (Cullen & West) drilled two tests, both of which were failures. The first one, Hartfield 1, had an oil showing around 5000 feet; a gas show at 6475 feet; set screen at 6890 feet and flowed salt water; and was abandoned at that depth. The second test, Winkleman 1, was abandoned at 4652 feet in sand and shale.
Smithers Lake	L. Smither Edward Jeffery Henry Jones	Bennett O. & G. Co.	Torsion	1928	An old prospect which has been a center of considerable activity at various times. Work was done with both seismograph and torsion balance, but doubt exists as to value of prospect.
Clodine	4 mi s Clodine	Gulf Prod. Co.	Torsion	1929	Undrilled.
Rosenberg	Lester E. Cross	Humble O. & R. Co.	Seismic	1929	First shot with seismograph and later checked by torsion balance. First test, A. W. Miller 1, located three and one-half miles west and a little south of Rosenberg, is now drilling close to 5000 feet.
Richmond	J. Kuykendall	Grayburg Oil Co.	Torsion	1929	Various companies worked this general area with geophysical instruments. Grayburg Oil Company is drilling around 1000 feet in the first test of the area, R. F. Ransom 1.
GALVESTON-BRAZORIA COUNTY LINE					
Halls Bayou	Asa Bringham	Humble O. & R. Co.		1928	Undrilled.
GALVESTON COUNTY					
Dickinson	J. F. Perry and E. M. Martin	Republic Prod. Co.	Torsion	1928	Sole test, Republic's Lobit 1, was abandoned in lime and shale at 4865 feet. It had a slight gas show in a sand at 1000 feet, but no other important showings.
Coon Ranch	S. A. White	Humble O. & R. Co.	Torsion	1928	Undrilled.
Hitchcock	W. H. Jack James Butler	.		1929	Rumored as favorable prospect. Would probably be structural condition, rather than salt dome. Undrilled.
San Leon	J. W. Little A. Edward	Humble O. & R. Co.	Seismic	1929	Undrilled.
HARDIN COUNTY					
Arriola	Arriola	Gulf Prod. Co.	Seismic	1928	Undrilled, but good prospect. Strong indications of salt dome.
Grigsby	E. Grigsby, Center	Petty Pet. Co.	Torsion	1929	Located about mid-way between Saratoga and Arriola. Structural condition present, but no salt dome unless very deep.
HARRIS COUNTY					
Aldine	Simon Contreras	Humble O. &R. Co.	Torsion	1928	Considered good prospect as salt dome. Gulf, Humble, The Texas Company and others checked area and took leases. Undrilled. Located eight miles due north of Houston.
Deer Park	Enoch Brinson N. S. Clopper	Humble-Gulf	Torsion	1928	Undrilled but good prospect as salt dome. Near Houston-La Porte highway, about mid-way between towns of Deer Park and Strang.
Genoa	Aug. Whitlock	H. C. Cockburn	Torsion	1928	Favorable salt dome prospect. North American Exploration Company made torsion balance survey for H. C. Cockburn, who has made deal with Humble Oil & Refining for development. Humble is now drilling first test, O. P. Woodburn 1, and is prepared to go down 6000 feet, if necessary. Casing was recently set at 3600 feet, at which depth an oil showing was rumored to have been encountered. However, Humble is now drilling below 3750 feet in the test.
Mykawa	W. J. Lovett	H. C. Cockburn	Torsion	1928	As at Genoa and Sugarland, H. C. Cockburn obtained leases after torsion balance survey was made for him by North American Exploration Company; and Cockburn, in turn, traded with Humble Oil & Refining Company for development. Humble has completed two tests, both as failures, and is now drilling third. First test, Minnetex 1, flowed salt water when screen was set in promising sand at 5497 feet, and was finally abandoned in shale at 5811 feet in March, 1929. Second test, W. H. Irvin 1, was junked and abandoned at 3810 feet. Present test, Irvin 2, is drilling around 3500 feet.
Almeda	R. T. Blackburn J. Hamilton	Vacuum Oil Co.	Torsion	1928	South Texas Petroleum Company (Cullen & West) drilled only test. That well, Hicks-Higbee 1, was abandoned as a failure at 4412 feet. No showings or encouragement obtained.
Bammel	C. Walters, D. Harmon C. H. Delesezdenie	Humble O. & R. Co.	Torsion	1928	Undrilled.
Satusma	A. Lawson M. McFarland	Humble O. & R. Co.	Torsion	1928	Undrilled.
Cedar Bayou	Hannah Nash Geo. Ellis	Shell Pet. Corp.	Seismic	1929	This prospect is four or five year old, but has not been regarded as particularly promising. Shell, however, became sufficiently interested this year to take leases, following seismic work. A miocene high, rather than salt dome, is said to be present.
JACKSON COUNTY					
Francitas	J. Powers Eldridge I. R. Foster	Shell Pet. Corp.	Seismic	1929	Very recent discovery. Undrilled. Other companies, as well as Shell, are interested in area. Town of Francitas is near center of prospect.
Ganado	J. Davis, S. Rogers W. Menefee, J. Heard	.	Seismic	1929	Very recent discovery. Undrilled.
Lolita	G. Ewing D. Hoffman	.	Torsion	1929	Very recent discovery. Undrilled.
JEFFERSON COUNTY					
Fannett	M. Bowers J. Smith	Gulf Prod. Co.	Seismic	1925	Discovery well, Gulf's Bordages 2, was completed January 20, 1927, for 50 barrels 28 gravity oil by heads, but soon went dead. Next producer was Bordages 6, a 135-barrel pumper completed at 4760 feet September, 1928. First flowing well, Burrell 2, came in January, 1929, flowing 1000 barrels 33 gravity oil at 5625 feet, and since then two other wells, Bordages 7 and Thomas 11 were completed in that deep sand but failed to hold up and are being deepened. A total of 21 tests have been completed at Fannett, including the five producers mentioned above. As indicated, the field is not yet on commercial basis. One new test is now drilling.
Hamshire	T. & N. O. 86	Shell Pet. Corp.	Seismic	1928	Although seismograph was first used, torsion balance was later used to check original findings. First test, Shell's C. T. Heisig 1, had an oil showing in sand and shale at 5000 feet; now drilling in sticky shale at 5693 feet.
McFaddin Ranch	S. Chatham	Shell Pet. Corp.	Seismic	1928	Undrilled. Although Roxana Petroleum Corporation (now Shell), worked this area with torsion balance in 1925, about same time Allen and Clemens domes were found, it was not considered very favorable until after seismic work in 1928.
Vacuum Prospect	T. & N. O. 208 A. Hotchkiss	Vacuum Oil Co.	Torsion	1929	Vacuum is now rigging up on J. E. Broussard 1, the first test of the area. This prospect is located about eight miles northeast of Big Hill dome.
Cheek	M. Pivitot W. Carr	Cockburn Oil Corp.	Torsion	1929	Favorable salt dome prospect. Undrilled Located about midway between Fannett and Spindle Top.

(Continued on page 208)

MARTIN-LOOMIS AUTOMATIC RECORDING WEIGHT INDICATOR





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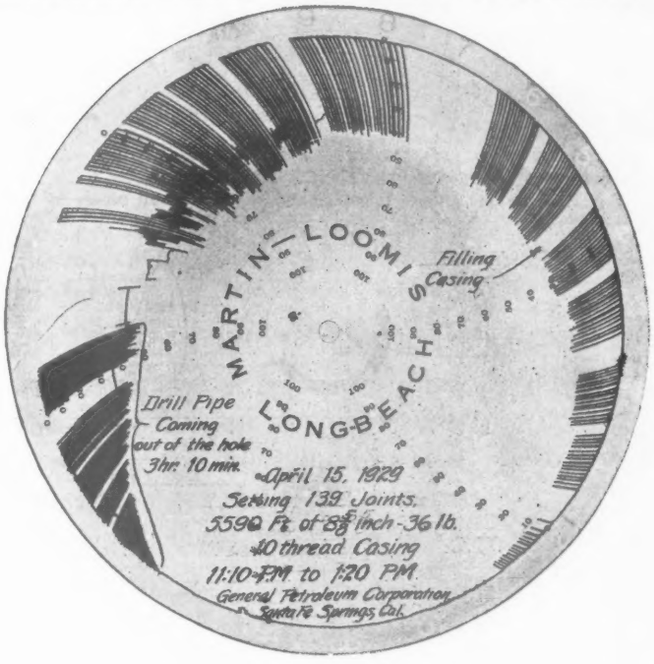

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Field or prospect—	Location by surveys	Discovery company, method and year		Remarks: Results of drilling; formations and showings found; discussion of importance of area
LIBERTY COUNTY				
Moss Bluff	J. McFadden	Gulf Prod. Co. ....Seismic	1926	Union Sulphur Company's first test, Kyle 1, discovered dome—cap rock at 860 feet. About a dozen tests have been drilled including several between 3000 and 4000 feet, without obtaining production, although a few oil showings were encountered. Two tests, one by Humble and the other by Pure, are now drilling.
Sheeks	C. W. Fisher	Union Explo. Co....Torsion	1928	Probably a structural condition exists. First test, Union Exploration Company's Esperson 1, had some good showings but was abandoned at 5800 feet. Second test, Esperson 2, had oil showings at 3200 feet, 3450, and 4125 feet, and tested salt water when screen was set at 5565 feet; at 5800 feet screen was set and well came in blowing gas and a little oil but then died and later test showed salt water. It was abandoned in sticky shale at 6014 feet. Harvey Smith is now drilling third test of the area, being down around 1000 feet.
Hankamer	H. & T. C. 22	Gulf Prod. Co. ....Seismic	1926	First test, Gulf's Boyt 1, came in June 6, 1929, making 700 barrels 20 gravity oil daily at 2674 feet when two joints of screen were set. Indications are that this is field of the Orange type, rather than the usual salt dome type of Coastal field. Gulf is now down 2000 feet in Boyt 2, second test of the area.
MATAGORDA COUNTY				
Hawkinsville	Kingston & Powell J. Williams	Gulf Prod. Co....Seismic	1925	Over 20 tests have been drilled without obtaining any production. Several were around 5000 feet deep. One test hit cap rock (gypsum) at 200 feet.
Shepherds Mott	D. McCarty, F. Fry	H. C. Cockburn ....Torsion	1928	Torsion balance work by North American Exploration Company. Before being checked by torsion balance, there had been some wildcatting on strength of surface indications. First test following geophysical work is now being drilled. It is Crossland et al's Hawkins 1. It had small gas show at 2625 feet, slight oil show at 3800 feet, and another slight oil show at 4875 feet. At 5260 feet heaving shale was encountered and it was necessary to go back to 4200 feet to sidetrack; now drilling at 4715 feet.
ORANGE COUNTY				
Port Neches	Mary E. Hall No. 1	The Texas Co....Seismic	1928	First test, The Texas Company's Kuhn 1, came in May 9, 1929, flowing 1900 barrels 21.4 gravity crude daily at 3160 feet. Like Hankamer, this field is probably of the Orange or non-salt dome type. It is located about mid-way between Spindle Top and Orange fields. The Texas Company is now getting ready to drill two wells.
Spear	Nancy Davis	Sun Oil Co....Seismic	1928	Undrilled.
VICTORIA COUNTY				
Bloomington	C. Creamer	Petty Pet. Co. ....Torsion	1929	Undrilled.
WALLER COUNTY				
Waller	B. B. B. & C. D. O. Boyle	Union Explo. Co....Torsion	1929	Very recent discovery. Undrilled.
WHARTON COUNTY				
Louise	Morris, Brown Cunningham	Pure Oil Co. ....Seismic	1928	Located five miles south of Hillje. Undrilled.

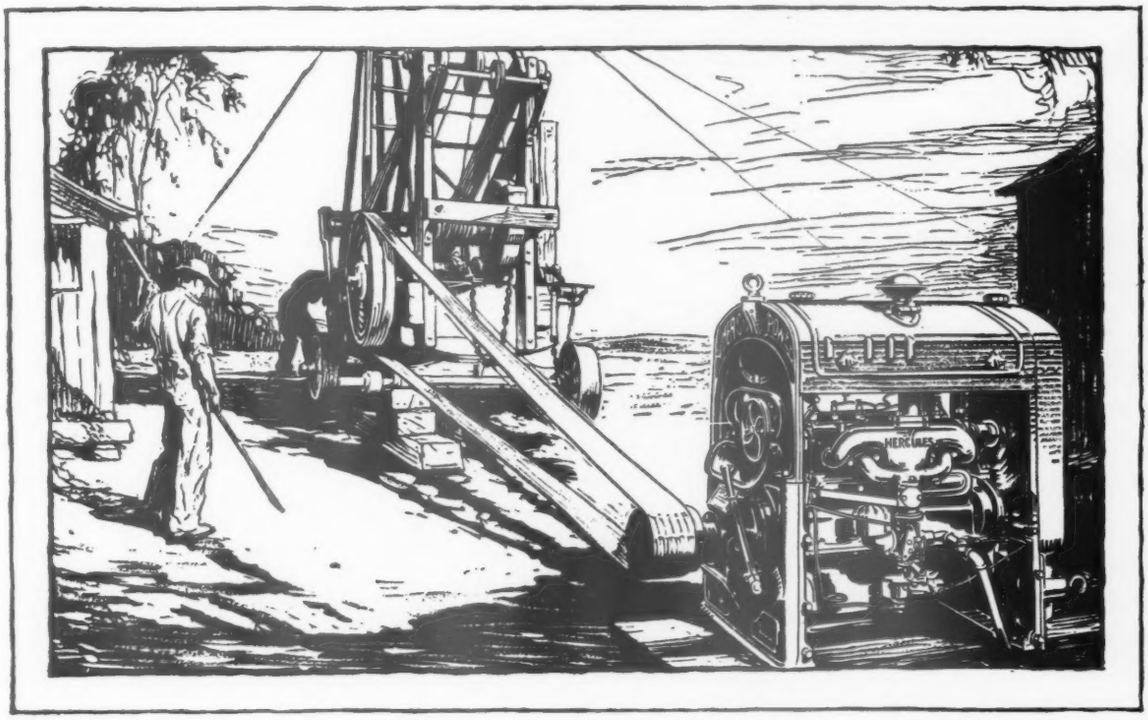
TABULAR HISTORY OF GEOPHYSICAL DISCOVERIES IN THE LOUISIANA GULF COAST

(Roanoke and Eunice found by torsion balance, all others by Seismic Method)

Field or Prospect	Sctions, Township and Range	Discovery Company Discovery Year		Remarks: Results of drilling; formations and showings found; discussion of importance of area.
ACADIA PARISH				
Egan	Sec. 30-9s-2w	Calcasieu Oil Co. 1927		Gulf, Magnolia and Calcasieu Oil Co. jointly control leases. They drilled one test, Houssiere-Latrielle 1, which was abandoned about Christmas, 1928, at 5800 ft, having encountered no important showings.
Iota	25, 26, 35, 36-8s-2w	Sun Oil Co. 1929		Discovered in June, 1929. Various companies obtained leases.
ASCENSION PARISH				
Darrow	Sec. 27-10s-2e	Gulf Ref. Co. 1927		Only test, Gulf's Belle Helene Sugar Co. 1, was abandoned May 25, 1929, in salt water sand at 5600 ft. No important showings.
Sorrento	15, 16-10s-4e	Gulf Ref. Co. 1926		First test cratered; fourth was discovery well, making 7000 barrels, 24 gravity oil, from cap rock at 1660 ft. Two other producers, also from the cap, have been completed; and there have been 11 dry holes. Fifteenth test now drilling. Discovery well was Gulf's United Lands Co. 4, finished Feb. 1, 1928. It was first Gulf Coast well east of Mississippi River. Field produced 282,200 bbls. in 1928. Present production 200 bbls. daily.
ASSUMPTION PARISH				
Napoleonville	Sec. 43-12s-13e	Gulf Ref. Co. 1926		Only two tests drilled, both by Union Sulphur Co. One was abandoned in anhydrite at 1125 ft, and the other in gyp at 675 ft.
CALCASIEU PARISH				
Starks	19,30-9s-12w	Gulf Ref. Co. 1925		Operated jointly by Gulf and Standard of La. First test proved dome and eighth was discovery well, flowing 2500 bbls 41 gravity oil at 4200 ft.
CALCASIEU-JEFFERSON DAVIS PARISH LINE				
Iowa	18, 19-9s-6w; 13, 24-7w	Shell Pet. Corp. 1929		Discovered in June, 1929. Undrilled.
CAMERON PARISH				
Black Bayou	7, 8, 18-12s-12w	Shell Pet. Corp. 1927		First test Roxana's (Shell's) Watkins 1, was abandoned in salt at 1700 ft May 4, 1928. Three producing wells have been completed. First was Watkins 9, which came in April 29, 1929, swabbing 30 bbls 19.6 gravity oil from cap rock at 981 ft; it later made a 35-bbl. pumper. Watkins 10, offsetting No. 9, made a 45-bbl. pumper at 980 ft. Those wells are on southwest side of dome. Watkins 6 on northeast side came in flowing 475 bbls. fluid, 25 per cent 28 gravity oil, daily, from sandy shale at 4727 ft. Aside from the three producers, Shell has drilled seven dry holes at Black Bayou.
East Hackberry	36, 37-12s-10w	Calcasieu Oil Co. 1926		First test, drilled jointly by Calcasieu Oil Co., Magnolia, and Union Sulphur Co., Caldwell 1, cratered. Second, Caldwell 2, on Nov. 7, 1927, came in as discovery well making 1000 bbls. 22 gravity oil at 3998 ft. Over 50 wells have been drilled here; about 60 per cent have been producers. Production in 1927 was 43,000 bbls; in 1928 it was 1,176,600 bbls, giving the field third place among South Louisiana fields for the year. This field also called Kelso Bayou. Several tests drilling.

(Continued on page 210)

Drilling Deep Water Wells with Natural Gas Power



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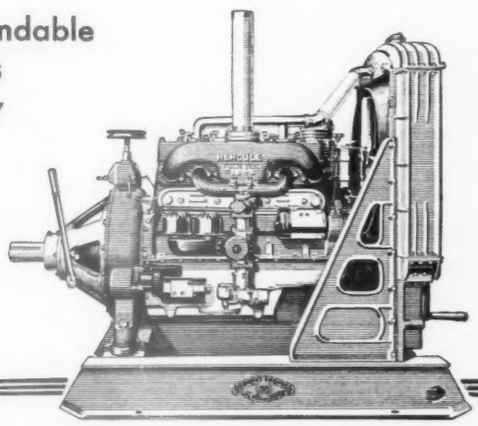

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Lake Misere .....Sec. 8-13s-5w	Pure Oil Co. 1927	Undrilled.
Calcasieu Lake ..... T 13s-R 9w	La. Ld. & Ex. Co. 1927	First test proved nothing. Second hit cap rock at 1492 ft and salt at 2343 ft. Third hit cap at 3500 ft. Fourth is location. Texas Co. now operating.
Mallard Bay .....Sec. 32-12s-3w	Shell Pet. Corp. 1928	Shell has location for first test, A. Marceaux 1.

IBERIA PARISH

Loreauville 26, 27-11s-8e	Gulf Ref. Co. 1926	Also called Fausse Pointe or Eagle Point. Union Sulphur Co. finished one of early tests as discovery well, pumping 325 bbls at 1150 ft. Only other producers, out of about 20 tests that have been drilled, were two Gulf wells pumping 50 and 100 bbls at 1150 ft. Gulf drilled all but a few of the total tests; is now drilling one. 1927 production, 16,800 bbls.. 4000 bbls. in 1928.
Vermillion Bay .....T 15s-6e	La. Ld. & Ex. Co. 1927	First test hit salt at 810 ft; second hit salt at 3700 ft; third was failure; fourth is location.

IBERVILLE PARISH

Bayou Blue .....Sec. 74-9s-10e	Calcasieu Oil Co. 1926	First test, Union Sulphur Co.'s Schwing 1, was abandoned at 2850 ft; no shows. Dome was proved when Standard of La. hit salt Dec. 8, 1928, at 4480 ft in Wilbert 1, the second test of area. Total of four tests completed; no production yet. Other two completed tests, both drilled by Standard, hit salt at 3450 and 4800 ft. Standard now has three operations on dome.
Bayou des Glaise .....Sec. 86-8s-8e	Calcasieu Oil Co. 1927	Three tests have been completed, all by Union Sulphur Co. First two went around 3000 feet but had no important showings. Third proved presence of dome, hitting salt at 3700 ft. No activity now.
Grosse Tete .....Sec. 55-8s-2w	Gulf Ref. Co. 1927	Also called Bayou Choctau. Undrilled.
White Castle .....1, & 8-11s-12e	Shell Pet. Corp. 1927	First test came in on own pressure at 1700 ft, making little oil, but died; second test had several good oil shows and hit cap rock at 4168 ft; third test short time ago set casing at 5615 ft to test oil sand.

JEFFERSON DAVIS PARISH

Roanoke 14, 15-9s-4w	Vacuum Oil Co. 1928	Whereas practically all other geophysical prospects in South Louisiana were found by seismic method, this is torsion balance discovery. First test, Vacuum's DeVilbiss 1, had 13 ft of oil sand at 4201 total depth; plug drilled Jan. 18, 1929; after running tubing well flowed and swabbed, making a little fluid, 95 per cent water and remainder 23 gravity oil; well has been deepened and is now shut down in sticky shale at 5685 ft. Second, and only other test is shut down at 5920 ft.

LA FOURCHE PARISH

Thibodaux 70, 71, 64-15s-15e	Gulf Ref. Co. 1927	Also called Chacahoula or Lutcher dome. No production yet although Gulf has completed 16 tests and Union Sulphur Co. four. First test that was drilled, Gulf's Stark 1, proved dome, hitting cap rock in Oct 1927. Salt encountered in various wells. Deepest hole less than 1800 ft. One test now drilling.
Bayou La Fourche.....27, 28-21s-22e	La. Ld. & Ex. Co. 1928	Undrilled.
Marchand 31, 32-23s-23e	La. Ld. & Ex. Co. 1928	Undrilled.

PLAQUEMINES PARISH

Potash . .....T 18s R 27e	Gulf-Humble 1928	Also called Home Place. Undrilled. Extends across Mississippi river.
Lake Grande Ecaille.....2-20s-26e	Humble O. & R. Co. 1928	Humble made two locations in June, 1929, but no actual drilling yet.
Lake Hermitage .....Sec. 1-18s-25e	Gulf-Humble 1928	Undrilled.
Spanish Pass 26-21s-30e	Gulf Ref. Co. 1928	Gulf made first location in Jan., 1929, but drilling is held up by legal controversy.
Quarantine 21s-32e	Gulf-Humble 1928	Undrilled. Located in bay just south of Main Pass.
Garden Island Bay 107-23s-32e	The Texas Co. 1928	First test had oil show at 1685 ft, hit cap rock at 1950 ft, and salt at 2015 ft. Location is made for second well.

ST. BERNARD PARISH

Lake Lery 23-14s-14e	Gulf Ref. Co. 1928	Undrilled.

ST. CHARLES PARISH

Lake Netherlands 33, 34-14s-22e	Gulf Ref. Co. 1928	Undrilled.
St. Rose .....12 & 13s-9e	Shell Pet. Corp. 1928	Undrilled.

ST. LANDRY PARISH

Port Barre 4-6s-5e	Gulf Ref. Co. 1926	First test, The Texas Co.'s Botney Bay 1, came in Feb. 23, 1929, showing 7 million ft gas and 800 bbls. 23 gravity oil; soon died; deepened and hit salt at 3933 ft. Texas Co. and Gulf each drilling one test now.
Eunice 14-6s-1e	Elbof Explorations 1928	Torsion balance prospect. Elbof abandoned one test, H. Smith 1, at 4315 ft, no shows.

TERREBONNE PARISH

Taylor Bayou .....Sec. 28-21s-14e	La. Ld. & Ex. Co. 1927	Louisiana Land & Exploration Co. calls this East Bay Junop dome; others sometimes call it Caillou Lake. The Texas Co., which is now developing it, however, calls it Taylor Bayou. Derrick is up for first test.
Dog Lake Bayou .....5 & 6-22s-16e	La. Ld. & Ex. Co. 1928	First test, The Texas Co.'s Dog Lake Bayou A-1, came in flowing 15 bbls daily May 20, 1929, from 1056-62 ft; was later put on air-lift and flowed 10 bbls. Locations made for second and third wells.
Four Isle Bayou 23-21s-16e	La. Ld. & Ex. Co. 1928	First test, The Texas Co.'s Four Isle Bayou B-1, still drilling; hit cap rock at 550 ft in June, 1929.
Bay Coon Road .....Sec. 17-22s-18e	La. Ld. & Ex. Co. 1928	First test, The Texas Co.'s Bay Coon Road B-1, completed as 20,000,000 ft gas well, 300 lbs. pressure, at 675 ft on May 25, 1929. Locations made for two more wells. La. Ld. & Ex. Co. calls this Bay St. Elaine dome.
Lake Pelto .....Sec. 8-23s-18e	La. Ld. & Ex. Co. 1928	First test, The Texas Co.'s Lake Pelto B-1, early in July, 1929, tested 65,000,000 ft of gas at 1250 ft, and is now drilling deeper.
Lake Barre 30, 37-21s-19e	La. Ld. & Ex. Co. 1928	First test, The Texas Co.'s Lake Barre A-1, proved dome, hitting salt at 852 ft. Second test now rigging up.
Timbalier Bay 19-23s-20e	La. Ld. & Ex. Co. 1928	First test now drilling; recently had oil show at 2345-65 ft but tested salt water, pulled screen and deepened; reported preparing to test at 2660 ft about July 15.

VERMILLION PARISH

White Lake 8, 9, 16, 17-15s-1e	La. Ld.-Shell-Humble	First reported early in 1929. Probably a dome. Undrilled.

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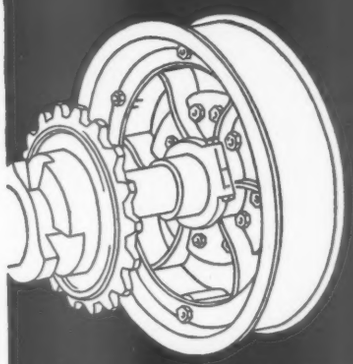

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Refining Industry Has Extensive Expansion Program

Increase of 1.9 per cent in capacity provided by plants constructed since January 1 provides additional outlet for crude

By GEORGE REID

Associate Editor, The Refiner and Natural Gasoline Manufacturer

AT no time since 1920 has the refining branch of the industry been engaged in such an extensive program of expansion of manufacturing facilities as has prevailed during the past year and as is now under way.

This branch of the industry, even though expanding its crude oil capacity rapidly, may be said to be apparently in a healthy condition as is indicated by the resumption of operations by many shut-down refineries and a decrease in the number of installations dismantled. The number of plants under construction is increasing, as is the total rated capacity of the completed refineries.

With completion of each new refining installation there is provided an additional outlet for crude and in each of the eight major refining districts of the United States there is some additional crude consuming installations. An analysis of the present situation and trend indicates that refiners in the majority of instances are carrying out a steady program of expansion justified by the increase in demand for refined products. While the end of the present 12-month period will find the industry with an apparent capacity of approximately 20 to 30 per cent. more than actual crude runs, it is well to bear in mind that capacity ratings are influenced by two factors, namely: the owners' pride in the plant, and the fact that only about 80 per cent. of the average refinery equipment is in service at any one time, due to necessary shutdowns for cleaning and repairs, etc. The rated capacity of the refining industry has always been recorded between 20 and 30 per cent. However, the present expansion program in this industry as the work is completed during the next year will bring about a gradually increasing crude processing capacity from the present figure of 3,325,890 barrels (operating capacity January 1) to 3,508,290 barrels. This estimate is exclusive of any new projects announced after June 1.

NINE refineries have been completed and placed in operation since January 1, adding 1.9 per cent to the total operating capacity of the refining capacity.

Twenty refineries are now building or proposed in the United States. They will add three per cent to the total operating capacity as reported January 1.

Three hundred fifty-eight refineries are now operating in the United States.

Completion of the present work will increase the rated operating capacity of the industry from 3,325,890 barrels to 3,508,290 barrels daily.

Charging crude at the same rate as last year (79 per cent of its average operating capacity) the refining industry will charge crude to stills at the rate of 2,771,549 barrels daily when present expansion is completed. This is at the rate of 1,011,625,385 barrels per year.

At 40 per cent gasoline recovery the industry can then produce 404,650,154 barrels of gasoline annually. Since the estimated demand for gasoline in 1929 is 393,000,000 barrels, a possible production of 404,000,000 barrels the following year does not seem out of line. The present expansion program of the refining industry is therefore justified.

Status on January 1.

In order to analyze the situation and to indicate the concentration of expansion throughout the eight refining districts and to forecast something of crude oil demands by these districts and the industry as a whole for the coming months, it is necessary to first break down the status of the industry as of January 1, 1929. According to Bureau of Mines Information Circular No. 6116, "Petroleum Refineries in the United States, January 1, 1929," by . R. Hopkins and E. W. Cochrane, there were 14 refineries building, January 1, with a total capacity of 99,000 barrels daily, which is equal to 2.97 per cent, of the total operating capacity of refineries in this country. This construction work was more or less concentrated in Texas as a consequence of the rapid development of the producing industry in West Texas. At this time there were nine potential crude consumers erecting equipment in Texas. In Table No. 1 is given the status of the refineries building as of January 1, and in the right hand column there is shown the status of those projects as of June 1. In Texas, five of the building refineries have been placed in

TABLE 1

Status of Refineries Building as of January 1, 1929, and Status of same plants June 1, 1929. (Bureau of Mines)

Districts	Plants Building	Name of Company and Location	Capacity Rating	June 1 Status
East Coast				
Appalachian				
Ind., Ill., Ky., Tenn., Michigan, etc.	1	White Star Refining Co., Trenton, Mich....	6,000	Building
Oklahoma-Kansas	1	Seminole Refining Co., Seminole	1,000	Operat.
Texas	1	Amarillo Producing & Refining Co., Del Rio..	2,500	Operat.
	1	Burford Oil Company, Pecos	5,000	Operat.
	1	Cosden Oil Company, Big Spring	10,000	Operat.
	1	Great West Refining Company, Big Spring..	5,000	Operat.
	1	Gulf Refining Company, Sweetwater	5,000	Building
	1	Richardson Refining Company, Big Spring ..	5,000	Operat.
	1	Shell Petroleum Corporation, Houston	20,000	Building
	1	The Texas Company, El Paso	1,500	Building
	1	The Texas Company, San Antonio	3,000	Building
Louisiana-Arkansas		J. B. Berry's Sons Company, El Dorado	2,000	Operat.
Rocky Mountain	1	The Texas Company, Cody, Wyo.	3,000	Operat.
California	1	The General Petroleum Corp., Torrance.....	30,000	Operat.
Total	14	Total Building Jaunary 1	99,000	
		Total Building June 1	35,500	
		Total Operating June 1	63,500	
			99,000	

Table 1 and 2—Grand Total—Number Plants Building and Proposed June 1, 1929 100,000

Table 1 and 2—Grand Total—Capacity Plants Building and Proposed June 1, 1929 20

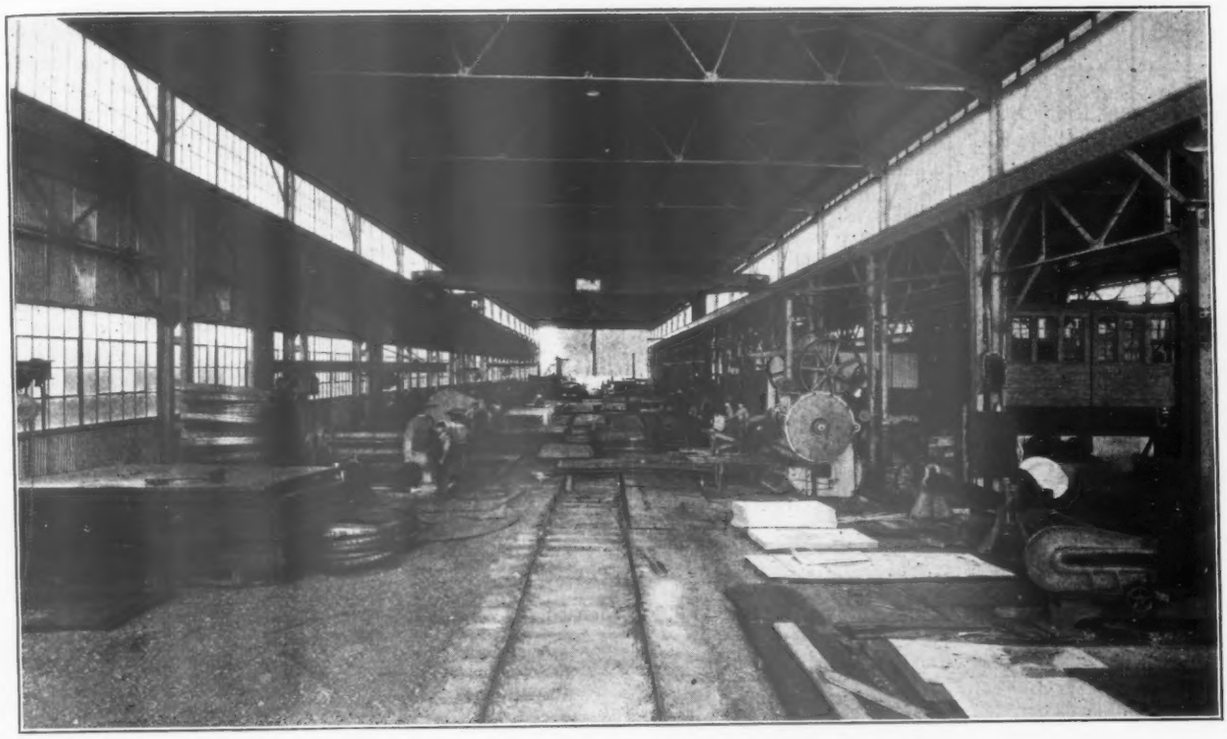

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TABLE 2

New Refining Plants Announced, Proposed, Building, and Resumed Operations Since January 1, 1929, as of June 1, 1929

District	Company Name	Location	Capacity	Status	Number Plants
East Coast	Gulf Ref. Co.	Staten Island, N. Y.	No report	Proposed	1
	Prudential Ref. Co. (Marland)	Md.	7,000	resumed operations	1
Appalach.	Penncrude Ref. Co.	Kennerdal, Pa.	400	resumed operations	1
Ind., Ill., Ky., Tenn., Michigan, etc.					
	The Apex Oil Co.	Nashville, Tenn.	500	resumed operations	1
	Empire O. & R. Co.	Chicago, Ill.	15,000	building	1
	Globe O. & R. Co.	Lemont, Ill.	5,000	rebuild & enlarge	1
	Old Dutch Ref. Co.	Muskegon, Mich.	3,000	rebuilding	1
	Michigan Central R. Co.	Muskegon, Mich.	3,500	building	1
	Muskegon Refs., Inc.	Muskegon, Mich.	500	building	1
	[1]Check & Associates	Muskegon, Mich.	3,000	proposed	1
Oklahoma-Kansas					
	Illinois Oil Co.	Cushing, Okla.	3,500	resum. & enlarging	1
	Interocean Oil Co., purchased by Producers Oil Co.	Bristow, Okla.	2,000	rebuilding	1
	Texas Pacific Oil Co.	Wynnewood, Okla.	3,000	resumed operation	1
	Wewoka Ref. Co.	Wewoka, Okla.	1,000	building	1
	Walters Ref. Co.	Walters, Okla.	1,500	resumed operation	1
	Wilcox O. & G. Co.	Bristow, Okla.	2,500	rebldg., part op.	1
Texas	Central Texas Ref. Co.	Luling	2,000	announced & Prop.	1
	Golden West Ref. Co.	Hondo	500	resumed operation	1
	Humble Oil & Ref. Co.	Boggy Creek	5,000	building	1
	Tidal Refining Company	Houston	15,000	proposed	1
Louisiana-Arkansas					
	Big Chief Oil Co.	New Orleans	5,000	announced	1
Rocky Mountain					
	White Eagle Oil & Ref. Co.	Casper	3,000	will enlarge	1
California	El Camino Oil Co.	Santa Fe Springs	1,500	building	1
			83,400	Total	23

Table 2—Announced or proposed—5	25,000
Table 2—Resumed operation—7	16,400
Table 2—Building—8	34,500
Rebuilding, Enlarging, part op.—3	7,500

[1]Proposed to move West Oil Corporation from Wichita Falls, Texas, to Michigan.

operation. In the United States nine of the 14 projects reported January 1 as building were completed and operating by June 1, adding 63,500 barrels daily capacity to the refining industry through completed building programs alone, which figure is equal to 19 per cent. of the total operating capacity as of January 1, 1929.

Change in Activities

During the first six months of 1929 the concentration of refinery expansion has been diverted from Texas to such districts as the Oklahoma-Kansas and the Indiana, Illinois, Kentucky, and Michigan areas and to include some expansion work in all of the eight manufacturing districts. In the United States the situation may be summed up in the statement that of the 14 plants building January 1, nine are operating, which leaves five building. In addition, 15 more plants are building or are proposed, giving a total of 20 building programs now under way, which for the most part are new installations. The total capacity now under construction is 100,000 barrels daily. January 1 it was 99,000 barrels. Despite the fact that the industry has added 1.9 per cent. of the total operating capacity it is still adding 3 per cent. more.

In the East Coast district one major company proposes a plant on Staten Island, for which no capacity figures are available. One large plant has resumed operation after reconditioning. In the Appalachian district one small plant has resumed operations. A 5000-barrel plant has been announced for the Louisiana and Arkansas district, and one refining company in the Rocky Mountain district announces plans for enlarging. In California there is only one refinery under construction. However, the operating capacity of California was increased already this year by 30,000 barrels, due to the General Petroleum Corporation completing and operating its Torrance refinery. The details of the present situation giving plants under construction, proposed and announced, and plants resuming operations since the first of the year are shown in Table 2.

It will be noticed that concentration of building and expansion appears in the Indiana, Illinois and Michigan district, where seven plants with a total capacity of 36,000 barrels are building or proposed. The building of five of these plants is directly traceable to the exploitation of the Muskegon, Michigan, oil fields.

With the building of two refineries, resumption of operations by four plants, and completion of one new plant, all since January 1, the Oklahoma-Kansas district has added 14,500 barrels daily to its operating capacity.

Texas, despite completion of five refineries since January 1, still has seven plants under way, with but one of them in the proposed list, that of the Tidal Oil Company at Houston. The small plant at Luling is now under way. Completion of present construction in Texas will add 51,500 barrels to its daily operating capacity.

In addition to the detailed list of activities as shown in Table 2, there are a number of expansion programs under way in this country which are not enumerated here for the reason that much of the equipment going in will replace present

TABLE 3

Status of Refining Industry in the United States by Districts and Estimated Status Upon Completion of Present Expansion as of June 1, 1929

January 1, 1929 District	Operating plants	Barrels capacity operating	June 1, 1929 Plants building and proposed	Barrels capacity building or proposed	Plants and barrels capacity resume operation since January 1,	Plants and barrels capacity completed and in operation since January 1	Forecast Operating status on completion present work barrels capacity	Total number plants
East Coast	24	588,200	1	No report	1— 7,000	.....	595,200	26
Appalachian	55	116,200	..	.....	1— 400	.....	116,600	56
Indiana, Illinois, Kentucky, Tennessee, Michigan	27	324,000	7	36,000	1— 500	.....	360,500	35
Oklahoma and Kansas	59	415,700	2	3,000	4—10,500	1— 1,000	430,200	66
Texas	68	658,100	7	51,000	1— 500	5—27,500	737,600	81
Louisiana and Arkansas	22	251,830	1	5,000	.....	1— 2,000	258,830	24
Rocky Mountain	34	130,400	1	3,000	.....	1— 3,000	136,400	36
California	52	841,460	1	1,500	.....	1—30,000	872,960	54
Total	341	3,325,890	20	100,000	8—18,900	9—63,500	3,508,290	378

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Sullivan Machinery Co.	Michigan City, Ind.
Titusville Iron Works	Titusville, Pa.
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obsolete units and will increase consumption of crude but slightly at these plants.

Survey of Capacity.

It is interesting to note that with an operating capacity of 3,325,890 barrels daily at the end of 1928, the refining industry had but 183,650 barrels of shut-down capacity. In other words, 5 per cent. was shut-down and 95 per cent. was operating, which indicates a healthy condition. In plants, 341 were operating and 72 were shut down, January 1, 1929.

Another interesting phase in regard to crude consumption by American refineries is found in the fact that the average operating capacity for 1928 was 3,140,000 barrels per day, while the average daily crude run to stills was 2,494,000 barrels. (Figures from Bureau of Mines Circular No. 6116). Therefore the industry processed crude at the rate of 79 per cent of its average operating capacity.

A further interesting item disclosed by a study of the tables is that the total indicated increase in refinery capacity which will prevail upon completion of present known work in the industry is 182,400 barrels, and this figure very nearly approximates the total shut-down capacity of the industry of 183,650 barrels. This would indicate that the new construction is actually required to offset any decrease in capacity due to abandoned plants, which for the most part are provided with obsolete or worn-out equipment. It is a fact that a great many of the shut-down plants should be omitted from any further surveys of refining industry capacities and plants, if for no other reason than the fact that the majority of them are not potential consumers of crude oil.

TABLE 4
Tabulated History of Refining Industry in the United States to June 1, 1929. Recapitulation by years to January 1, 1929. (From Bureau of Mines.)

Date	Plants Building Number[1]	Plants Building Capacity Barrels	Plants Completed Number	Plants Completed Capacity Barrels
January 1, 1914[1]	.	...	176	...
January 1, 1918	.	...	267	1,186,155
January 1, 1919	.	...	289	1,295,115
January 1, 1920	99	263,500	373	1,530,565
January 1, 1921	44	76,600	415	1,888,800
January 1, 1922	30	59,950	479	2,109,200
November 1, 1924	8	18,200	547	2,814,332
January 1, 1925	6	37,000	541	2,827,837
May 1, 1925	4	11,000	550	2,853,842
January 1, 1926	2	5,500	510	2,852,967
January 1, 1927	7	61,000	466	3,061,007
January 1, 1928	5	22,000	423	3,250,380
January 1, 1929	14	99,000	413	3,509,540
June 1, 1929[2]	20	100,000	430	3,591,940

[1]From the Bureau of Census.
[2]From Survey June, 1929
Capacity added first six months 1929, 82,400 barrels daily, 17 plants.

Expansion to Meet Expected Demand.

Demand for crude for 1929 is estimated at 995 million barrels. The situation in regard to crude consumption was adequately discussed by H. J. Struth, Petroleum Economist, in THE OIL WEEKLY of February 22, 1929. In his "Preliminary Survey of 1929 Crude Demand," Mr. Struth pointed to the fact that to meet the requirements of the 1929 gasoline market, this year the quantity of crude required would be 995,000,000 barrels. Of this estimate the American producer will have to furnish 915,000,000 barrels, or 2,507,123 barrels per day. Crude oil pro-

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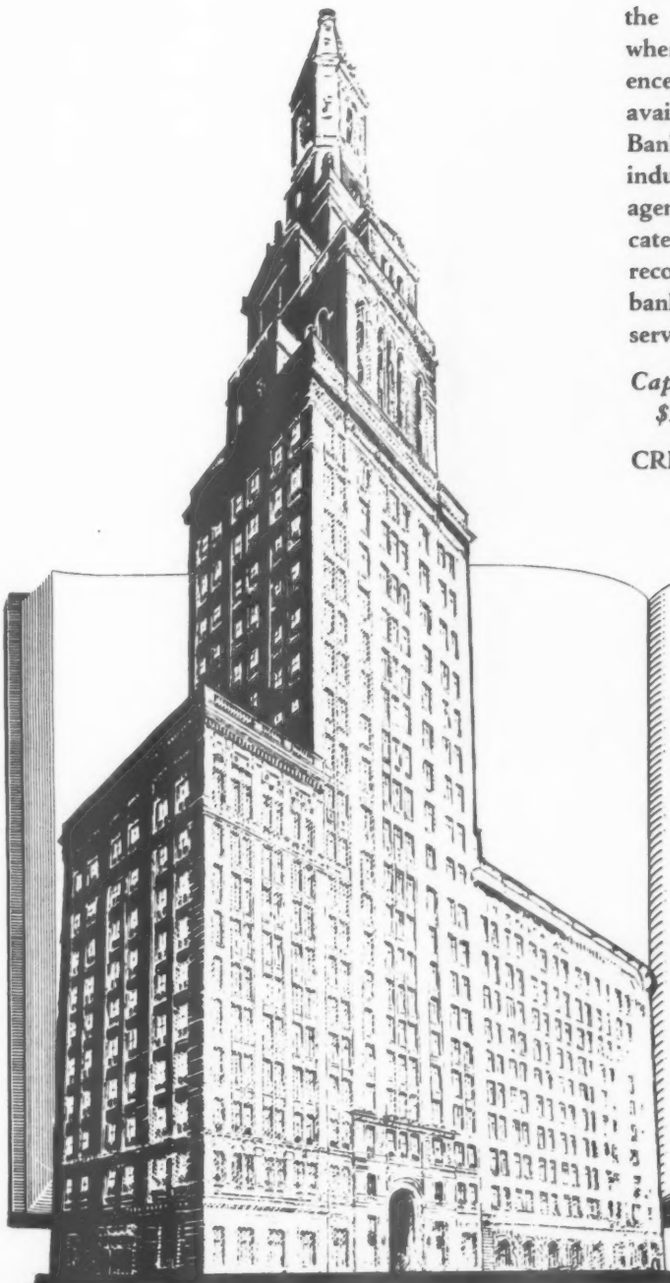

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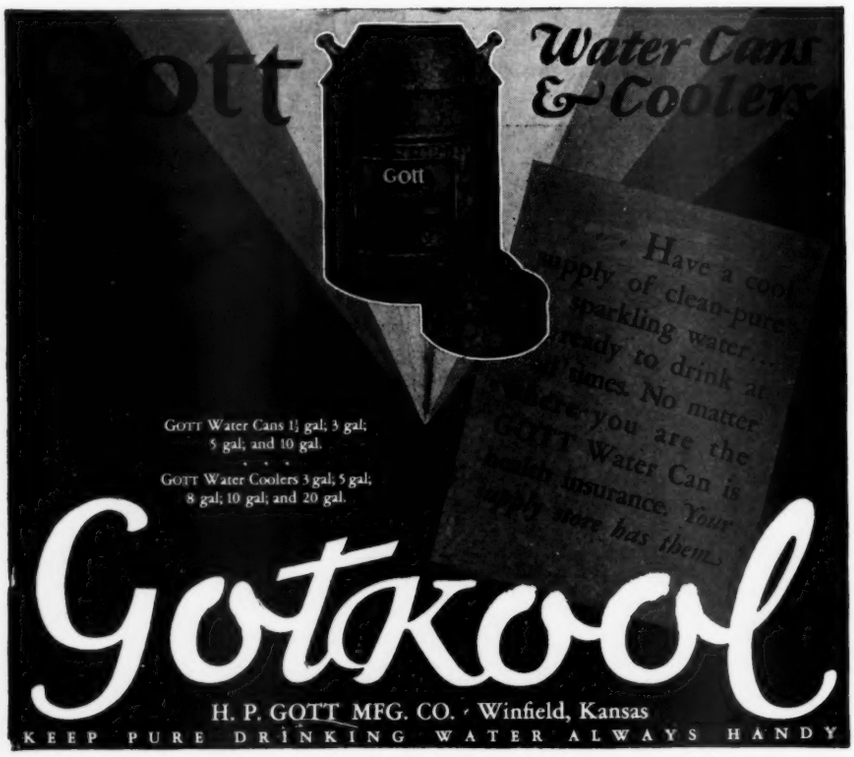
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Acme Tool Company, Albany, Texas
Acme Tool Company, Brownwood, Texas
Acme Tool Company, Cross Plains, Texas
Acme Tool Company, McCamey, Texas
Acme Tool Company, Pyote, Texas
Great Northern Tool & Supply Co., Billings, Mont.
Great Northern Tool & Supply Co., Kevin, Mont.
Great Northern Tool & Supply Co., Kemmerer, Wyo.
Great Northern Tool & Supply Co., Cody, Wyo.
Elms Brothers & Company, Waynesburg, Pa.
Lloyd, Smith Company, Bradford, Pa.
Logan Foundry & Machine Co., Logan, Ohio
Magner Supply Company, Muskegon, Mich.
Magner Supply Company, Saginaw, Mich.
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duction for April, 1929, was at the rate of 2,670,000 barrels, according to the Bureau of Mines.

In 1928 the crude demand was 932,000,000 barrels. The average amount of crude charged to stills by the refineries was 2,494,000 barrels per day (Bureau of Mines). Multiplying by 365 we have a total refinery consumption of 910,310,000 barrels for the year. The indicated increase in demand for 1929 was sufficient to justify the present expansion program of the refining industry.

In order to satisfy the estimated demand for gasoline this year and to handle the 915,000,000 barrels to be furnished by American producers alone, the refining industry must maintain an average of 2,507,123 barrels daily crude run to stills. This means that practically 75 per cent. of present operating capacity of 3,389,390 barrels, of the refining industry must be kept in service. This is about the average operating proportion of the rated operating capacity which the industry can keep in service securing an average recovery of 39.5 per cent. gasoline from the crude treated.

With the present expansion and building program maintained and with the present ratio of shut-down capacity to operating capacity maintained throughout the period, the refining industry will have increased its rated operating capacity to 3,508,290 barrels per day when the work is completed. Assuming that the industry can maintain its proportion of crude runs to stills at 79 per cent. of its average rated operating capacity, it will, at that time, be able to charge crude to stills at the rate of 2,771,549 barrels daily. This it at the rate of 1,011,625,385 barrels per year. At 40 per cent. gasoline recovery the refineries of this country some time next year will be able to produce gasoline at the rate of 404,650,154 barrels annually. Since the estimated demand for 1929 is 393,000,000 barrels, the above figure of 404 million barrels, in round numbers for 1930 does not seem much out of line. This line of reasoning points to the justification of the refining industry in its present expansion of manufacturing facilities.

Reports of new projects planned by many refining companies and not yet announced, and the continuous improvement of refining equipment and expansion at established refineries is indicative of the fact that the refining industry is at the present time engaged in a program of enlargement which will enable it to adequately take care of potential demand for gasoline greatly above that of the present. Leaders in the industry confidently expect to see a gradually increasing rate of crude run to stills along with the increased efficiency of refining equipment and an increasing recovery of gasoline from the barrel of crude.

OKLAHOMA CONTRACTING COMPANY

Pipe Line Contracting

DALLAS TULSA

Threat of Senate Investigation Injected in Tariff Fight

WASHINGTON, D. C. — Import duties of one dollar per barrel on crude petroleum and 50 per cent advalorem on petroleum products, with drawback provisions for gasoline manufactured from imported oil for export sale, were urged upon a special subcommittee of the senate finance committee July 18 by representatives of the independent producers of Louisiana, Texas and the Mid-Continent field. The hearing was arranged at the request of the producers to enable them to answer the assertions of representatives of the oil companies who appeared before a subcommittee the week before.

Declaring that if it were true that there was an overproduction of oil in the United States, it would be the best argument that could be advanced in favor of putting a tariff on oil, W. Scott Heywood, of Jennings, Louisiana, asserted that instead of over-production, the output in the United States in 1928 fell short of total domestic demand by 66,500,000 barrels, the alleged overproduction being caused by the importation of oil from foreign countries which, he declared, amounted to 91,000,000 barrels for the year. Thousands of independent producers have failed and thousands more will face ruin unless tariff relief is given, he told the subcommittee.

Investigation Threatened

Unless Congress sees fit to heed the plea for a tariff on oil, Heywood declared, a full investigation of the oil industry will be demanded from the senate. The same identical interests which are actively opposing our request," he said, "are the ones which not only today dominate and control the American market to the extent of dictating and fixing the prices of both the crude petroleum and the refined product, but also own foreign fields, produce foreign crudes, employ foreign labor, and import much foreign products into the United States in competition in and with the domestic market, dictated, dominated and conrtolled by thmeselves.

"American citizens engaged in the necessary and legitimate business of producing petroleum, will not voluntarily submit to such un-American competition. Under present policies and practices we do not face competition, but rather extermination and extinction.

"If we are to perish, before we go we hereby serve notice upon our would-be executioners, that we will ask and demand, at the hands of the senate of the United States, a full and exhaustive examination and investigation of the policies, practices, records and books of the men, firms, associations, organizations, corporations and super-corporations now dominating and controlling the petroleum industry of America.

"The reason that the major oil companies of the United States are fighting against the tariff on foreign oil is very apparent," the witness asserted. "In the first place, there are no independent producers in Venezuela or Colombia, and second, most of the imported oil coming into this country is coming from Venezuela and Colombia, and is being produced by the Standard Oil and its subsidiaries and affiliated companies, and the Dutch Shell and Gulf Companies, and they are shipping most of this foreign oil to themselves and putting an unreasonable price on it, in my opinion, for the purpose of buying domestic production at a song, and at the same time, they are charging for gasoline and lubricating oil nearly the same price that they charged in 1926, when they were paying the producers and royalty owners practically twice as much for our oil as they do today.

"They do not need a tariff on foreign oil to enable them to raise the price of gasoline. They raise the price when they feel like it and the public has to stand for it whether they like it or not."

Asked for his personal opinion of the alleged domination of the industry by large companies, Heywood declared he would like to see the oil industry taken over by the federal government, to con-

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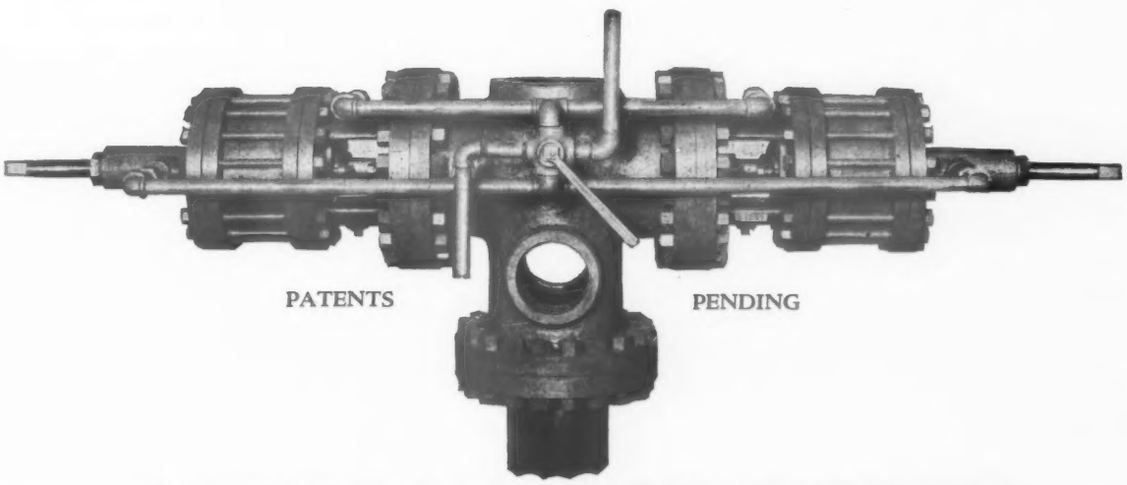

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FORT WORTH, TEXAS

trol production and prices, so as to assure a fair profit to the producers.

Declaring that there is something wrong in an industry in which the producers of the raw material are faced with ruin and bankruptcy while the manufacturers and distributors of the finished product are highly prosperous, Representative E. B. Howard of Oklahoma told the subcommittee that the failure to place a tariff on oil will be a victory for the Standard Oil Company, a great benefit to them financially, but of practically no benefit to any other American citizen.

Representative Howard told the subcommittee that large oil companies have threatened to build refineries abroad if a tariff was placed on oil, but that there would be no need to do this if the proposed import duties were adopted and accompanied by an amendment extending to oil the privilege of free importation when intended for use in the manufacutre of products to be re-exported. This, he pointed out would keep cheap foreign produced oil out of competition with domestic petroleum while not depriving the refiners of their ability to use the oil to meet the export demand for their refined products.

The proposed duties on oil were supported by representatives of the National Coal Association who are favoring them as a means of eliminating from competition with their products the cheap fuel oil which is being used to an increasing extent for domestic and commercial heating purposes.

FIGURE 688
Sizes 1/8" to 2" inc.

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Unit Control and Proration Pacts Limit West Texas Drilling

(Continued from page 74)

is held out for Lea County, New Mexico, but the latter will hardly be accomplished this year.

Texas Panhandle.

The Texas Panhandle is slated for a material boost in production during the next two months, by reason of a belated drilling campaign having been launched in Gray County early this summer, with activity gaining momentum lately. Field work is largely confined to within a five-mile radius of the discovery oil well of the county after an unexplainable delay of five years, and is spurred on by the frequent completion of new wells in the Bowers-Jackson, Finley-Brown and Lefors fields ranging above 3000 barrels of 42-44 gravity oil on initial flows at the 2900-3000-foot level. A letup in big wells on completion reports will determine the volume of field work in Gray County on short notice, and it is quite probable that the end of 1929 will mark the passing of the peak on both drilling and production in the county until other prolific areas are uncovered.

Current crude demand and prices are influencing operators in Hutchinson, Carson, Moore and Wheeler Counties, in building up their oil production by drilling more tests on proven undeveloped leases, but this work is being carried out on a conservative basis. Wildcatting in

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the Texas Panhandle is at a low level, and is not offering immediate prospects of a revival. The mounting demand for natural gas to supply the six major gas lines supplying the lower Rocky Mountain region, Middle Western States, Oklahoma and Texas assures a steady drilling campaign in the gas areas of the Texas Panhandle over the next few years, or until the fields have been drilled up.

North Texas.

The North Texas district, extending east, west and south over Wichita Falls, is assured of an active drilling campaign over the balance of 1929 through having a large volume of proven and semi-proven undeveloped acreage awaiting the drill. Wilbarger and Archer Counties are destined to continue to share liberally in this new field work, while a steady but conservative development program is assured for Wichita, Young, Jack, Cooke and Montague Counties, with Foard, Throckmorton and Haskell Counties being due for an increase in wildcat work.

The above counties are the most important source of high gravity sweet oil in Texas, and active drilling only serves to maintain daily production of the district near the 100,000-barrel mark. This volume balances favorably with local refinery and trunk line demand, while a temporary flush output can easily be absorbed during normal times by the purchasing agencies serving the district.

Wilbarger County is one major oil producing area in the state that can be counted upon for a steady drilling campaign by reason of the bulk of the production being concentrated on the W. T. Waggoner ranch, and virtually all leases taken on this large property carries an obligation to carry out a continuous drilling program until all locations have been drilled. However, the Waggoner estate has made it a practice to waive many of the drilling obligations for an indefinite period when crude prices are at a low level, and when a slack demand for crude exists.

Central West Texas.

Central West Texas, extending from Breckenridge to Brownwood and into the adjoining counties to the east and west of this trend, is expected to continue to lag behind on drilling activity over the balance of 1929 because of absence of any appreciable volume of proven undeveloped acreage that is attractive to drill up at present crude prices. Both Eastland and Stephens Counties have deep line areas that can be counted upon for small wells on initial gauge, but lease owners are holding back for better prices before going after this type of production.

The Cook ranch area, Shackelford County, has been the scene of a steady development campaign for several years, and is slated to be fairly active over balance of 1929, with a small group of companies holding a reserve supply of leases. Roeser-Pendleton, Inc., and Continental Oil Company are in control of the situation, and are to do most of this shallow drilling, but the volume will be regulated for the best interests of conservation, with the gas being used for repressure work. This county has several other smaller areas somewhat similar to the Cook ranch field, and drilling is to be on a conservative basis.

Coleman County offers a moderate drilling campaign over the balance of this year through the drilling up of a number of small pools that are mostly held by a few concerns. Brown and Callahan Counties are in need of new producing areas to assure anything like a campaign, and wildcat activity during the first half of the year has brought forth negligible results.

The East Central Texas fault zone, centering around the Mexia-Corsicana district, is apparently out of the picture from a drilling and increased production standpoint, and the only activity of any proportions is the development of a shallow pool near Mt. Calm, Hill County, where pumpers are completed in the Austin chalk.

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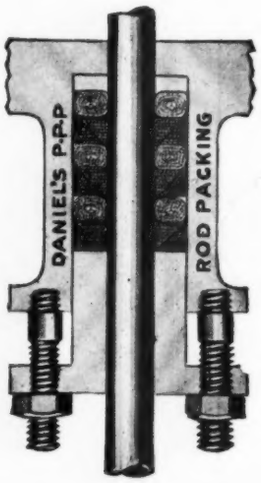

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Four Tests Drilling to Deep Big Lake Sand

(Continued from page 90)

back from 5156 feet, but only a small show of gas appeared after the shot, and the hole was abandoned.

Runnels, Pecos, Crockett, Jones and Fisher Counties, which have established oil producing areas, contributed several tests each to the dry hole crop that passed up favorable showings of oil and gas, but not in commercial quantities.

Pecos County

Pecos County again led all other counties in the district in popularity with the wildcatters, having 44 dry holes as a toll in the successful completion of six wildcat oil and gas producers. This county completed 43 dry holes in the previous year without a successful strike in the wildcat areas. Eleven of the new crop of failures were drilled on the north, west and south edges of the Yates field in an effort to extend production, thus leaving 33 failures in the county for the 12 months which are to be classed as wildcats. Operators and companies are hopeful of developing another field in Pecos County that will compare with the Yates shallow field, and the majority are content to quit when the shallow lime horizon has been penetrated to the sulphur water horizon. The 44 dry holes in Pecos County during the past 12 months had an aggregate footage of 88,213 feet, or an average of 2005 feet per hole, while the average for all dry holes completed in the district is 2950 feet.

Jones County was the second largest contributor of dry holes, having a total of 34 as compared to 13 during the previous year. A heavy toll of failures was exacted from operators trying to extend production in the Noodle Creek and Tiner-Smith fields, and both areas were practically defined on all sides within the past year.

Development of the Hendrick field on a large scale enabled Winkler County to enjoy the most field work within the past year, as 370 oil producers were completed, and only 20 dry holes.

West Texas Operators Complete 1007 Wells During Year

(Continued from page 86)

an objective. Two or three small showings of even less importance appeared between 6480 and 6900 feet.

Average cost of the four deep holes now in progress is estimated to run considerably less than the deep discovery well of Texon Oil & Land Company, which totaled around $140,000. This producer, University B-1, is producing through 2339 feet of open hole, having 5 3/16-inch seamless pipe cemented at 6184 feet. From production of its first deep oil to July 16, University B-1 yielded 461,871 barrels of 56 gravity plus (corrected) crude with no sign of water. At that time daily production was slightly more than 2700 barrels of oil and 25,000,000 cubic feet of sweet gas carrying a heavy gasoline content.

Santa Rita 2-C, the only rotary hole among the four 8500-foot tests, was drilling at 2996 feet July 19 after spudding with cable tools March 10 and changing to rotary March 24 at 250 feet. Fifteen and one-half-inch conductor was set at 250 feet, and 10¾-inch was set at 2896 feet. This rotary outfit is equipped with a 122-foot Moore tubular derrick, 26-foot base, with special steel legs and relegs. The rig is a six-speed Oil Well draw works, Type 353-K powered by two 25-65 Westinghouse electric motors on a Hild drive. At 25 horsepower 570 r.p.m. are developed, while at 65 the outfit is making 1160 r.p.m. The Hild drive gives an automatic drive, both motors running in the same direction in hoisting, thereby furnishing double power for the load, whereas in drilling they run in different directions and allow the driller to maintain any desired weight on the drill pipe by simply throwing the brake back and letting the load control itself. An Oil Well Imperial Make-and-Break rotary is being used.

The Santa Rita 2-C outfit is equipped with an Oil Well Mud Hog, 7¼x18, oil bath power driven pump taking power off two 200 horsepower Westinghouse electric motors. The controller on this power furnishes nine different speeds, and the pumps are built for 1500 pounds working pressure.

Formations thus far in the rotary hole have been drilled with Hughes disc bits.

The crew on the 2-C location is keeping a record of every variation in power registered through the use of a graphic recording meter, which makes an accurate record of power every minute.

Parmaco Lead Plug with Steel Mandrel

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More than 300 Lincoln "Stable-Arc" welders are being used to arc-weld thousands of miles of pipe line. The Lincoln roll call includes the following pipe lines:

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Tres Pinos—Mendota, Calif.	49 miles	16 "Stable-Arc" welders
Rock Springs, Wyo.—Ogden—Salt Lake City, Utah	277 miles	10 "Stable-Arc" welders
San Augustine—Corsicana, Texas	157 miles	10 "Stable-Arc" welders
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Port Arthur—Port Neches, Texas—2 lines	each 11 miles	6 "Stable-Arc" welders
El Paso, Texas—Jal, N. M.	205 miles	6 "Stable-Arc" welders
Lamkin—Hodge, La.	45 miles	5 "Stable-Arc" welders
Lafors—Childress, Texas	80 miles	5 "Stable-Arc" welders
San Antonio—San Marcos, Texas	50 miles	5 "Stable-Arc" welders
Monahans—Midland, Texas	60 miles	3 "Stable-Arc" welders
City of San Antonio, Texas	20 miles	2 "Stable-Arc" welders
Hodge—Jonesboro, La.	9 miles	2 "Stable-Arc" welders
Freeport—Mount Bryan, Texas	6 miles	2 "Stable-Arc" welders

The roll call definitely proves the marked preference of general contractors and welding contractors for "Stable-Arc" welders. Their preference has placed Lincoln arc-welding equipment far in the majority on arc-welded pipe line jobs.

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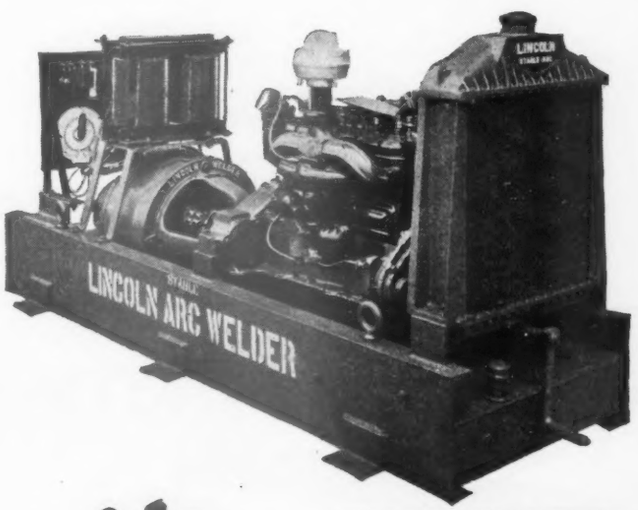

This is a type of Lincoln "Stable-Arc" Welder popular on arc-welded pipe line jobs. It is a 200-ampere generator powered by a heavy duty 1200 r.p.m. engine.

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General Offices AURORA, ILLINOIS and Factory

Wichita Falls Refinery Changes Hands

Wichita Falls, Texas.—Victory Petroleum Company of Delaware has acquired the Boardman Oil Company's skimming plant, located near Wichita Falls, according to J. E. Force, secretary-treasurer of the former concern, and will resume operations shortly after improvements and additions can be made to the plant. The refinery was originally known as the Sunshine State Refining Company, and is rated at 750 barrels daily, but is to be enlarged. C. B. Ray has been engaged as superintendent. He was formerly in charge of the Burkburnett plant of the LaSalle Petroleum Company, which recently succeeded the Noble Oil & Gas Company.

Open Royalty Pool Office at Houston

Houston.—The Flag Oil Company, which is doing organization work for the Texas Osage Co-operative Royalty Pool, has established an office in Houston, with Fred J. Stancliff in charge. The Texas Osage Co-operative Royalty Pool, headquarters of which are in San Antonio, is modeled upon the pool of mineral rights in the Osage Indian Nation. It provides that those entering the pool shall exchange one-half their mineral rights for a proportional share in the profits of the pool when it shall be completed. Mineral rights accepted by the pool are perpetual, and the pool participates in all rental and bonus moneys derived from the sale of leases to operating companies. Thus the revenues of the pool are derived from three sources: the sale of leases, annual rentals on leases, and oil and gas pipe line checks. The Flag Oil Company, in return for organization work, will receive a one-fourth interest in the mineral rights acquired by the pool.

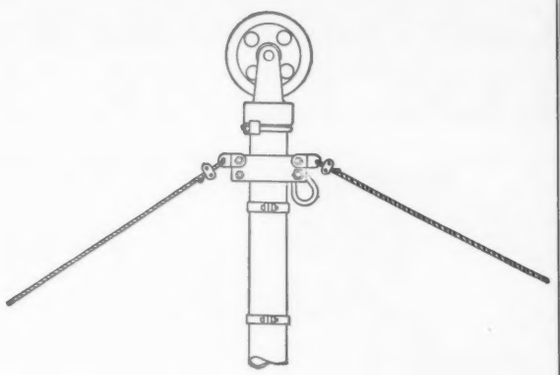
The Texas Osage Co-operative Royalty Pool received a permit to operate from the State of Texas on May 5. It is proposed to assemble a pool of about 1,500,000 acres, and the pool is expected to be completed in about two years. Up to the present, 75,000 acres have been put into the pool.

Similar pools are in process of organization in Oklahoma, Kansas, and New Mexico.

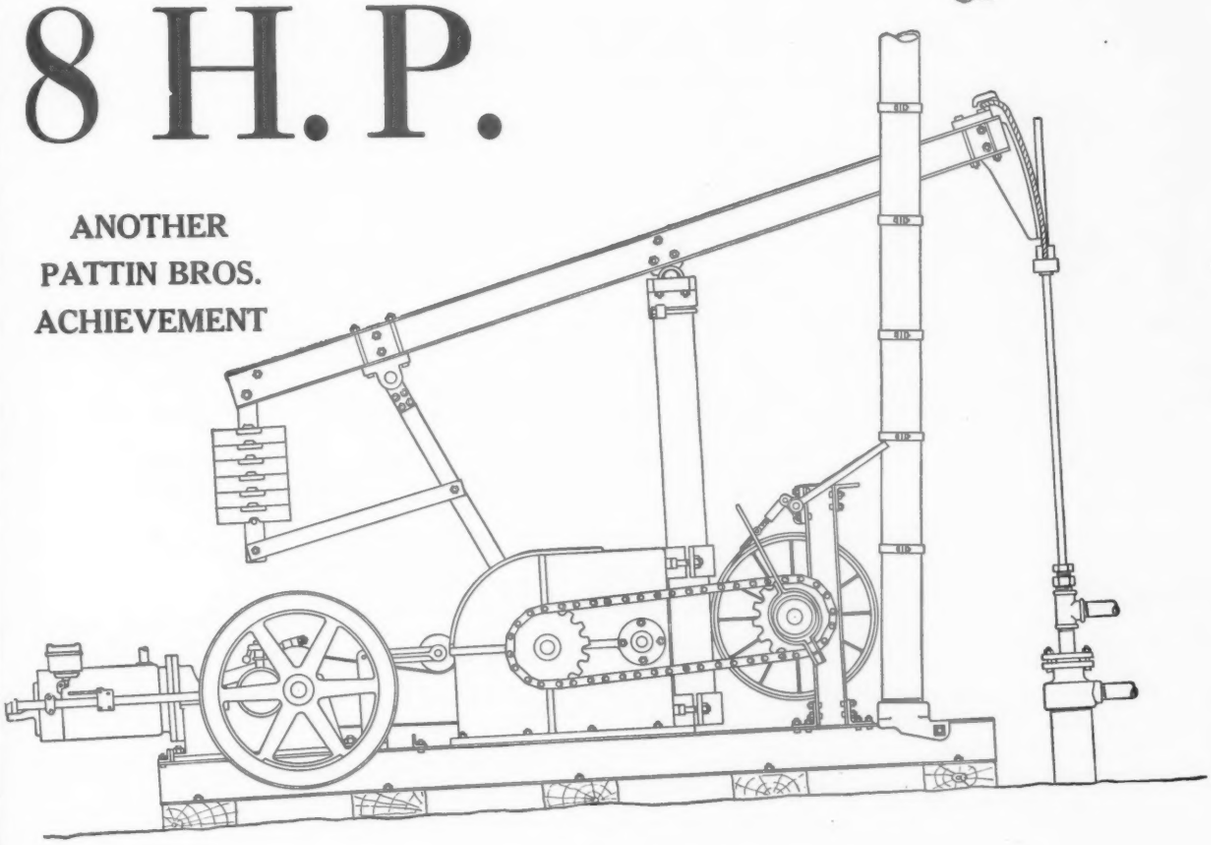
Captain James P. Williams, geologist for the Cockburn Oil Corporation, is acting in an advisory capacity for the Houston district, and F. J. McNellie, independent operator, is active in the organization of the pool.

J. Burr Gibbons, vice president of Oil Well Improvements Company, Tulsa, is on a business trip through the Rocky Mountain states, visiting at oil field centers in Colorado, Wyoming, Montana and New Mexico.

NEW~ Single Well 8 H.P.



ANOTHER PATTIN BROS. ACHIEVEMENT



THIS new Pattin Bros. power is a single well 8 H.P. beam pumping unit belt driven with belt tightner running on roller bearings. All gears are enclosed, running in oil, and every bearing on power, including pitman, has roller bearing.

It has a 36 ft. mast, spool will hold 3,000 ft. ½ inch line; two brake bands 26 inches diameter, 3 inch face, operated by hand or foot clutch on spool. Shaft can be thrown in or out while spool is running. Engine is fitted with force feed lubricator suitable for twenty-four hours run.

Mast and spool are independent of pumping unit and can be moved from one power to another, thereby saving the expense of mast and spool for every power.

We recommend this power for wells 2,500 feet deep. It will pull rods or tubing or handle bailer.

Prices and circular on request.

PATTIN PRODUCTS

- Gas Engines
- Air and Gas Compressors
- Vacuum Pumps
- Shackle Irons
- Pumping Powers
- Oil Country Boilers
- Steel Storage Tanks
- Water Pumps
- Torpedo Reels and Clamps
- High Pressure Tanks
- Howe Casing Heads

The Pattin Brothers Company

MARIETTA, OHIO

Tulsa, Okla.	Coleman, Texas	Wichita Falls, Texas	Putnam, Texas	Bradford, Pa.
A. S. Dunnington	J. Barnes	J. W. Noland	Putnam Supply Co.	The Blaisdell Machinery Co.

THE PATTIN BROS CO

Curtis Pipe Threading Machines Take LESS FLOOR SPACE... LESS POWER... COST LESS...

Take a Curtis light machine to the pipe, not your heavy pipe to the light machine. Save your cartage and get dependable work through a Curtis.

Write for full details.

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AND CURTIS
315 Garden St., Bridgeport, Conn.

Sullivan Structure Drill, Cores 6955 Feet, Moves 14 Times in Month

One structure testing record after another is being broken by the Gypsy Oil Company, with Sullivan Structure Diamond Drills. First, it was 5702 feet, fourteen moves, in one month, for one of their Sullivans.

"N" Structure Drill Good for 2-inch Core to 2000 feet.

Then came a six months' record of 25,610 feet and 60 moves.

Now it's nearly 7000 feet, in fourteen holes, in one month.

Sullivan Structure Diamond Drills define trends, and determine sub-surface "highs" without guess work. They will show you the favorable well locations of one or two whole townships, for the cost of a single wildcat.

Send the coupon for full information.

USE THIS COUPON

I am interested in Sullivan Diamond Drill for
( ) Structure Drilling ( ) Deep Tests
( ) Drilling Against Gas Pressure

Name .....

Address .....

SULLIVAN MACHINERY COMPANY
825 Wrigley Bldg., Chicago

SULLIVAN

National Tool and Metals Expands Facilities

M. G. BRUMBLY

National Tool and Metals, Inc., of Torrance, California, is further expanding its manufacture and distribution of hard surface materials through the purchase recently of the Quality Oil Tool Company of Long Beach, manufacturers of Drillite, a metallic diamond compound. The deal was closed early in July by M. G. "Curley" Brumbly, vice president of the purchasing concern.

National Tool and Metals, Inc., has, through this purchase, added the third new company to its organization within three months. Pacific Welders Supply, Standard Machine Company and Carbon Alloy Steels, Inc., are the other concerns purchased recently.

Buying of Quality Oil Tool Company by the National Tool and Metals, Inc., unites the diamond-sub inserts, known as Anglite, and the metallic diamond compound, known as Drillite, under a single sales organization. Anglite is for use with the acetylene torch, while Drillite is for use with the electric arc.

Properties of the selling company have been moved to Torrance, adding to the capacity of the purchaser.

Petroleum Safety Council Meets at Bartlesville

Tulsa.—E. D. Murphy, president of the Petroleum Safety Council, Mid-Continent Oil & Gas Association, announced last week the invitation extended by Carl H. Martin of Phillips Petroleum Company to hold the July 26 meeting at Hillcrest Country Club, Bartlesville.

"Tell all of the golf fans to be sure and bring along their clubs," says Mr. Martin, "and we will meet the representatives coming by train at the station, if notified of their arrival." The meeting opens at 10 a. m., Friday, July 26.

Oil Shipments

Beaumont, Texas.—Water shipments of the Sun Oil Company during June from the company's crude oil terminal at Sun on the Neches River near Beaumont aggregated 442,071 barrels, all shipments consisting of coastwise traffic.

Moss Bluff Dome

Houston—Pure Oil Company's Liberty Investment Company 1, a wildcat test on the north side of Moss Bluff dome, Liberty County, is drilling sand at 1793 feet. Humble Oil & Refining Company's Sterling 5, located on the east side of the dome, is reaming at 4168 feet.

General Offices
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AMERADA CORPORATION

Petroleum Building
Tulsa, Oklahoma

STALEY, WYNNE & COMPANY

OIL PRODUCERS

OFFICES:

STALEY BUILDING - - - WICHITA FALLS, TEXAS

Baker Oil Tools to Make Fishing Tools Under Yungling Patents

RECENT purchase by Baker Oil Tools, Inc., Huntington Park, California, of the full line of fishing tool specialties which were invented and have been manufactured by Paul Yungling recalls the climaxing of one of the most interesting careers in the manufacturing branch of the industry.

PAUL YUNGLING

Yungling Improved Spiral Guide, the Yungling Combination Pipe Parting Overshot, Yungling Marvel Screw Grab and the Yungling Marvel Twist-Off Safety Device, all of which were invented by Paul Yungling, are included in the Baker Oil Tools, Inc., acquisition to be further developed and placed on a wide scale production by the purchasers.

Paul Yungling, pictured here, got a pumping job in the Newhall fields in 1891. Since that time, with the exception of a short period spent in South America in the mining business, he has either worked in or served practically all of the world's leading foreign fields.

In 1896 Mr. Yungling went to South America with W. L. Hardison, later founder of the Union Oil Company, to engage in mining, and spent a year there. From his return to California until 1913 he worked in Pacific Coast and foreign fields, studying formations and their relative problems in drilling. In 1913 he went to Japan to superintend the drilling of rotary wells for the Chugai Asphalt Company and for the Kobe Oil Company. He worked there until 1915, when he went to Burma as a Lucey Manufacturing Corporation representative. From Burma he was sent to the Dutch East Indies to study geological and operating conditions for the Lucey Corporation. In the winter of 1915 he went to The Hague to enter into negotiations with the Royal Dutch Shell Company for drilling contracts in the Dutch East Indies. He worked in this and other foreign territories until 1920, studying and solving complicated jobs and devising tools for handling hard drilling. The fishing tools which bear his name have grown out of his special work in fields throughout the world during his 37 years of experience in combatting new problems.

In 1922 he returned to America to become associated with the Lucey Corporation, but shortly went into the manufacture of his own tools. Since 1923 he has manufactured special fishing tools and distributed them to operators in India, Burma, the East Indies, South America, Mexico and to New York concerns distributing to foreign fields.

Baker Oil Tools, Inc., is now working on plans for getting the Yungling tools into quantity production and bringing the products to the point of meeting standardization.

RE-PEL-EX

A non-corrosive Ball and Seat—just try one where acid or other strong elements are present! At any good supply store.

The Charles N. Hough Manufacturing Co.

FRANKLIN, PENNSYLVANIA

McCollum Exploration Co.

Contracts taken for Seismograph Work

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WASHINGTON, D. C..

FOREIGN COUNTRIES
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HOUSTON, TEXAS

PATENTS
Patents Obtained and Trade Marks and Copyrights Registered
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Fairfax 8232 Houston, Texas

Imperial Royalties Company
Established April, 1920

Will pay a monthly dividend of 1½% on its $1.00 par Preferred shares on July 31st. This is dividend No. 106 and makes a total of 179½% paid to Preferred shareholders. Also, a monthly dividend of 18 cents a share will be paid on its Class A Preferred shares on July 31st.

E. S. HORN — H. O. BLAND
J. E. HORN
Trustees
Hunt Bldg., Tulsa, Okla.

Coastal Oil Finding Company

Contracts taken for Torsion Balance Work

Esperson Bldg., Houston, Texas
Phone Fairfax 4383

JOHN F. WEINZIERL
CONSULTING GEOLOGIST
ADVISOR ON GEOPHYSICAL INSTRUMENTS
619 Petroleum Bldg., Houston, Texas

TEXAS SAND & GRAVEL CO., Inc.
Waco, Colorado and Amarillo, Texas
Washed and Screened Gravel and Sand, Pea Gravel, Dredged Pit run Gravel, Road Gravel, and railroad ballast.
Home Office: 1904 Amicable Bldg., Waco, Texas
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PATENTS
Patents Obtained, Trade Marks, Patent Causes
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Formerly Assistant Examiner United States Patent Office
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THE FT. WORTH LABORATORIES

Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Sell Thermometers, Hydrometers and Laboratory Glassware.

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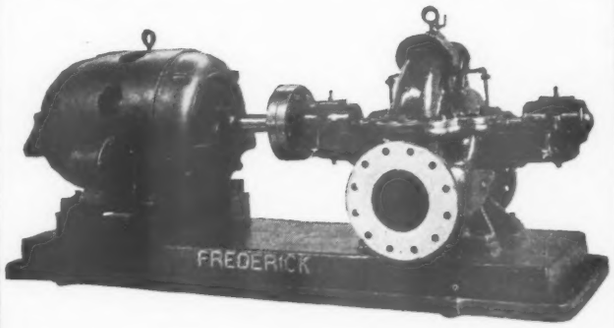
Attorneys at Law
Bankers Mortgage Building,
Houston, Texas
Specializing in Oil Law and Land Law

Dan T. Moore



Will Cooperate With You

Consult Dan T. Moore about *Centrifugal Pumps* in the mid-continent field.

He may be reached in Texas:

3701 Esperson Bldg. Houston

730 Allen Bldg., at Dallas

516 Frost Building in San Antonio

FREDERICK PUMPS

THE FREDERICK IRON & STEEL CO., FREDERICK, MD.

WHY are oil fires so rare today? It's because oil men are utilizing the most efficient means of protecting their property. Throughout the industry you will see refineries, bulk stations and tank farms enclosed with Cyclone Fence—America's standard property protection. Installed by our trained men—we take complete responsibility. Phone, wire or write for prompt service.

TEXAS CYCLONE FENCE COMPANY

Subsidiary of United States Steel Corporation

Works and Offices: Fort Worth

Direct Factory Branches and Warehouses: Houston, Dallas, Tulsa

Also Sales Offices: New Orleans, Shreveport

Cyclone Chain Link Fence is now furnished with H-Column Line Posts — proved by tests the strongest fence posts made. Set in new reinforced concrete foundations—no cracking from frost action.

All chain link fence is not Cyclone. This name plate identifies the genuine Cyclone Fence.

Cyclone Fence

REG. U.S. PAT. OFF.

(C) C. F. Co. 1929

WHY WE ADOPTED A NEW TYPE OF BOX

IN the past we have been packaging Garlock packings in the strongest containers it was possible to purchase. However, we did not consider them a satisfactory package for our Quality Controlled products.

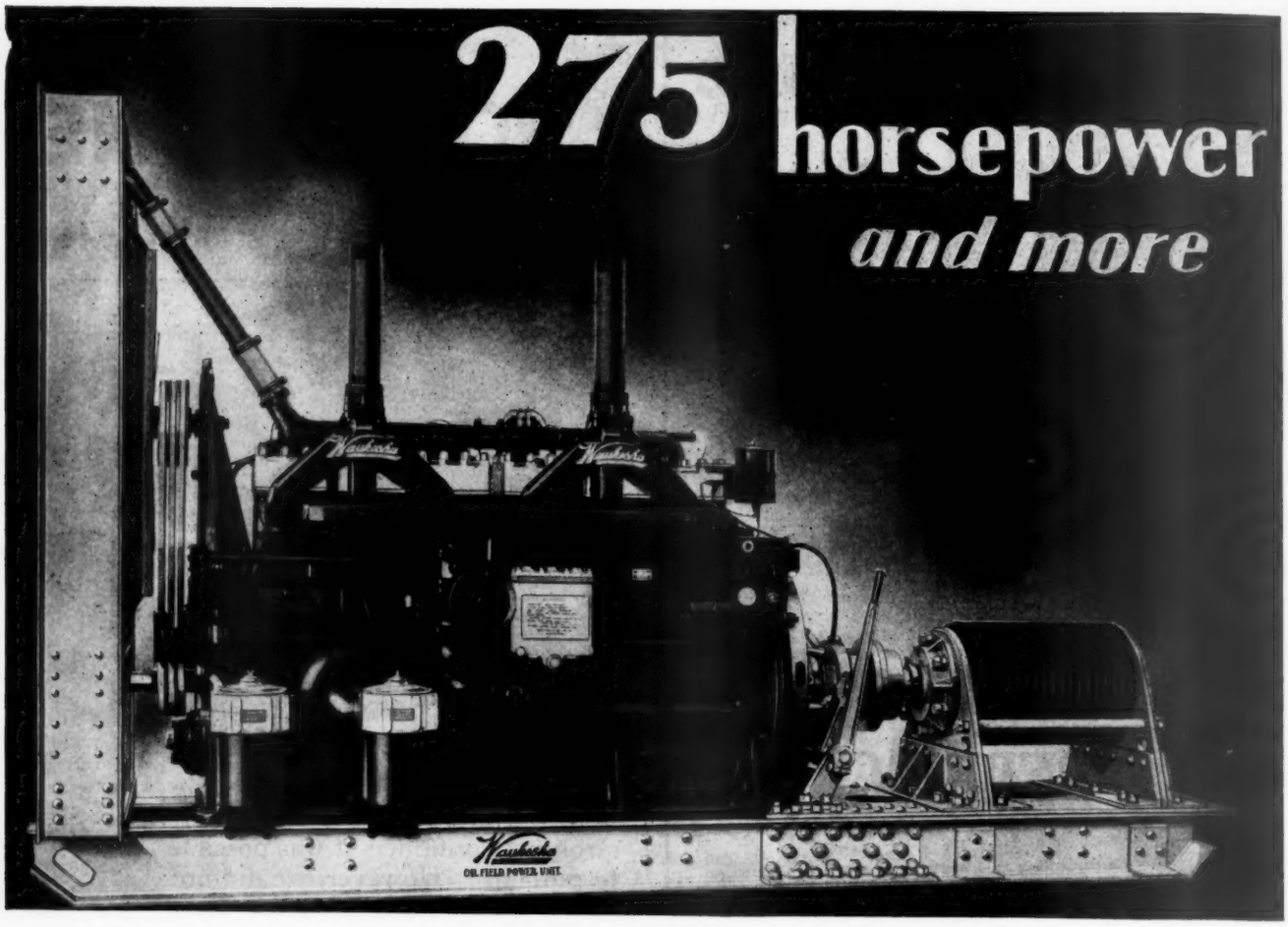
After several years of painstaking investigation we found a super fiber board that is grease proof, light in weight and extremely strong.

All Garlock packings are now put up in this new type of box. On account of its grease and moisture proof properties you will find the packings are protected in every way and will keep in the best of condition.

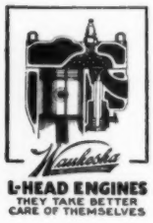
Eliminate waste by making use of this new feature of Garlock Service.

THE GARLOCK PACKING COMPANY

PALMYRA, N. Y.



▲▲ already—a *proved* engine *for oil field work*



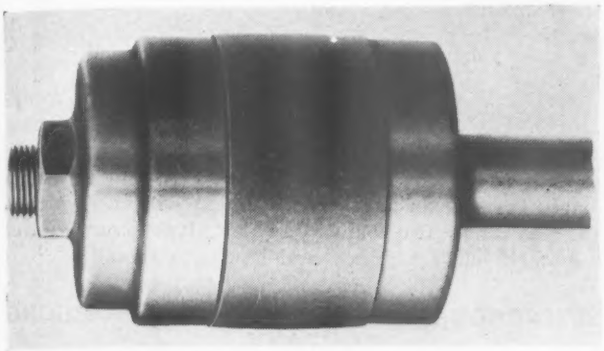
For rotary drilling . . . generator drive . . . compressor drive . . . and any oil field power need . . . it's a *remarkably smooth* engine, this Waukesha Great Six. Every hour in the twenty-four it will faithfully deliver its full 275 horsepower . . . *and more.* Yet it weighs but sixty pounds to the horsepower and the complete unit requires less than forty-five square feet of space. For fuel it uses either natural gas or gasoline.

You'll want to know about all the new features which make any of the three sizes of the Waukesha Great Six as nearly one hundred per cent reliable as an engine can be. Write *Oil Industry Equipment Division* for complete information. *Waukesha Motor Company, Waukesha, Wisconsin. Offices: New York - Tulsa-Houston - San Francisco.*

955

WAUKESHA ENGINES

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS



Automatic Slush Pump Piston

Slush Pump Piston

NATIONAL TOOL & METALS, INC.

National Tool & Metals, Inc., of Torrance, California, is marketing a new automatic slush pump piston under the trade name of "Nelson." This piston, non-pulsating in principle of operation, has as its main features automatic expansion and equalized liner pressure at all times.

A high grade steel spring exerting pressure against four tapered steel slips, which, in turn cause the rubber of the piston to expand and hold an even tension at all times against the liner and reduce pump liner wear to a minimum, makes possible the automatic expansion and equalized liner pressure of the piston.

The "Nelson" piston has been run 56 days without showing signs of excessive wear. In this particular case the liner of the pump was worn down three-eighths of an inch and the rubber of the piston was worn down five-eighths of an inch. During the test the pump was used for drilling from surface to production on a Ventura field well. The formation was extremely hard and produces at times a large amount of sand.

An added feature of the "Nelson" piston is the metal follower plates and heads that act as protectors against which the piston rubber can seat. Thus the piston rubber offers little chance of losing its pressure on account of overlapping.

The piston is made in all sizes from five-inch to 7¾ inches.

Complete details may be obtained by writing the manufacturers.

Combination Disc Bit

BYRON JACKSON COMPANY

Byron Jackson Company, Los Angeles, is manufacturing a combination disc bit which drills and reams the hole at the same time. The bit portion of the new tool is practically the same as the former Byron Jackson rotary disc bit with the addition of two underreamer rollers, one on each side of the heavy shank.

This new combination makes hole faster under extremely light pressure, the manufacturers explain, which, according to latest findings of field experts, insures making straighter hole to any depth.

While reaming the hole out to gauge as it drills, the side rollers of this reamer disc bit, through continuous contact with the side walls, serve to keep the discs centered and straight, further tending to drill a straight hole.

The Byron Jackson Company is desirous of furnishing further information to anyone interested in this new piece of equipment.

New Combination Bit

LUCEY MANUFACTURING CORPORATION

Lucey Manufacturing Corporation, Chattanooga, Tennessee, is manufacturing the Brunt combined fishtail and underreaming bit, a fishtail bit with collapsible and interchangeable cutters so designed as to drill and underream in a single operation. Saving in time and the elimination of the necessity of having to drill the hole and to pull drill pipe to re-run for underreaming is the purpose of this new tool.

The advantage of having 100 per cent. cutting edge to be dressed on the cutters and the arrangement of the water course holes, preventing the balling up of the bit, offers an attraction for the combination.

The cutters, when fully expanded, over-lap far enough to prevent twisting out of shape and to prevent rocks or other substances from lodging between the cutters to cause jamming. The cutters are embedded firmly into a shoulder and spudding can be done in the same way as with the ordinary fishtail bit.

Should the casing hang up while running in the hole, the job of pulling the string for cleaning out the obstruction is eliminated, as this combination drills through such obstruction while the casing hangs in the hole.

Complete information covering this bit is given in Bulletin No. 126-A published by Lucey Manufacturing Corporation, copies of which may be obtained from the Chattanooga office or from any distributor of Lucey equipment.

New Crown Block

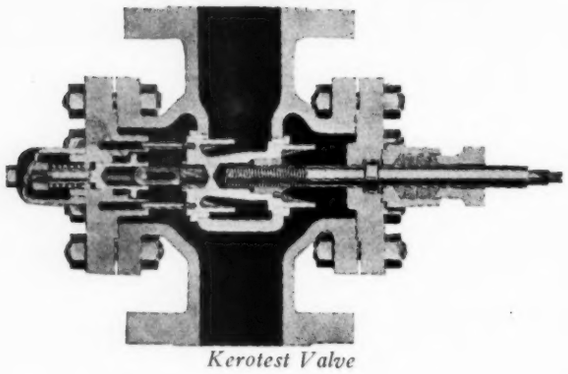
PARKERSBURG RIG & REEL COMPANY

Parkersburg Rig & Reel Company's latest addition to its line is the new roller-bearing type crown. Choice of five sheave rotary or six sheave cable tool type is ready for distribution.

The accompanying photograph shows the single deck type with five casing sheaves. For a true, easy rolling motion this new block has incorporated Hyatt roller bearings, thereby giving the product the co-operation of the two concerns in design and manufacture. The bearings in this block are self-aligning and lubricated by the Zerk-Alemite system. They are completely enclosed in a housing for protection against all foreign matter.

More complete details of this new block may be obtained by writing Parkersburg Rig & Reel Company, Parkersburg, West Virginia.

New Parkersburg Crown Black



Kerotest Valve

Improved Throttle Valve

KEROTEST MANUFACTURING COMPANY

Kerotest Manufacturing Company, Pittsburgh, is manufacturing an improved type of throttle valve which aims to provide a quick, positive release of any accumulated pressure when the valve is in the closed position. It is a cast steel valve designed to not only well regulate all pressures but also to provide a quicker opening and a more sensitive control. It has been applied successfully in the fields under working conditions at both high and low pressures.

The accompanying illustration will show that the improved throttle valve is a radical departure in design from the usual method. The double seating arrangement maintains an exact equalization of pressure as well as preserving balance. Triangular openings of the valve proper allow sensitive control. The stem is of the non-rising type, having no operating threads exposed to damage or interfering with ease of operation. The release valve is automatic and positive in operating, opening at all times when the valve is full closed.

Literature and full information will be sent by the Kerotest Manufacturing Company of Pittsburgh upon request.

WESTINGHOUSE CONTROLLER BULLETIN

Westinghouse Electric & Manufacturing Company, East Pittsburgh, has published leaflet No. 20,388, describing the new line of Class 12-700 Type A reversing drum controllers for wound rotor induction motors. These controllers embody several new important features: reversible contact segments which may be easily trimmed after burning, self-aligning fingers, ball and roller bearing construction, interchangeable operating heads, and a compact overall construction facilitating wiring and installation. A copy may be had by writing the company.

MEAD-MORRISON CATALOG

Mead-Morrison Manufacturing Company, 125 Prescott Street, Boston, has just distributed its new 40-page catalog describing the company's motor truck winches, cranes and derricks. The catalog serves a practical purpose, listing all of the equipment lines by key numbers, sizes, capacities, with a thorough explanation of operation and photographic illustrations of actual working conditions. This catalog, No. 31, will be mailed upon request to the company at the above address.

Happy Belting Company, of Tulsa, has opened a new store at El Dorado, Arkansas. A full stock of the company's line will be carried in the new store. A. L. Oliver, for the past 10 years a resident of El Dorado and familiar with the trade and its needs in that vicinity, will be in charge.

BAASH-ROSS TOOL COMPANY

Baash-Ross Tool Company, 5512 Boyle Avenue, Los Angeles, has published a new insert to its loose leaf catalog, to follow page 238. This section describes the company's cam pumping unit, a late development for pumping oil wells, and a piece of new equipment which has had wide distribution in California especially.

Further details may be had by writing for the lastest loose-leaf section.

D. & M. MACHINE WORKS

D. & M. Machine Works of Lomita, California, manufacturers of oil well specialties, will establish a warehouse in Houston to carry a complete line of the company's products. Expert field service men to take care of products through Texas, Louisiana and Arkansas will be employed in the new office. The company further plans to carry warehouse stocks in West Texas and Louisiana soon.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY

F. A. Merrick has been elected president of Westinghouse Electric & Manufacturing Company.

E. M. Herr, president of the company since 1911, has resigned to take an extended vacation, and has been elected vice-chairman of the board, according to A. W. Robertson, chairman of the board.

Merrick was formerly vice president and general manager of the company. He was manager and chief engineer of the Steel Motors Company, a subsidiary of Lorain Steel Company, at the time Westinghouse Electric & Manufacturing Company acquired that company.

T. J. Neilan, president of the Neilan Schumacker Company, recently returned to Los Angeles from an extended business visit in the East, and immediately left for points in the Pacific Northwest for his annual vacation.

CENTRAL TOOL COMPANY OPENS OKLAHOMA CITY SHOP

The Central Tool Company, with offices at 906 Colcord Building, Oklahoma City, and with a shop at Shawnee, Oklahoma, has put into operation a shop at Capitol Hill, the seat of operations for the Oklahoma City field. This new shop is under the supervision of R. A. Painter. The shop is equipped for all kinds of rotary and cable tool repair work, with forging hammers, electric welders and pipe machines for cutting pipe from 15½ inches, down.

J. V. Spear, formerly with an advertising agency in Los Angeles, has joined the Consolidated Steel Corporation as advertising manager.

The Ford Chain Block Company announces appointment of C. A. Anderson as sales manager with headquarters at the general offices, Second and Diamond Streets, Philadelphia. The Ford Chain Block Company manufacture "Tri-Bloc" Chain Hoists, Worm Gear Hoists, Differential Hoists and Eye Beam Trolleys and maintain branches in Chicago, New York, New Orleans and Pittsburgh.

Climaxing a six months "no accident" campaign at the Hinderliter Tool Company's new factory in Tulsa, the Maryland Casualty Company presented A. G. Lott, plant superintendent, with a merit banner at a meeting of all the Hinderliter employees and officials held at the plant recently.

The safety program was started shortly after the opening of the new plant on North Peoria and covered the six months period ending May 1, 1929. This award signifies that there has not been a single "lost time" acciden during the period covered and this is the first award covering this type of manufacturing risk in Oklahoma.

View of one of our Plants

Facts about Creosote and Creosoting

A specific Creosote Oil is required for timber used in The Tropics. Piles or lumber treated with

Reilly Improved Creosote Oil

are permanently treated, for it is a permanent oil, and piling and lumber treated with it give the fullest service. It is axiomatic that if the protector (the Creosote Oil) leaches or evaporates from the wood it is without protection, and destruction immediately follows.

Reilly Improved Creosote Oil

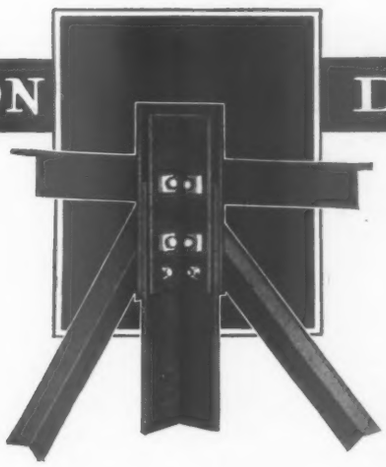
is non-volatile, contains the high-boiling constituents and other properties that must remain in the wood to protect it.

Write or wire for additional Information and Prices

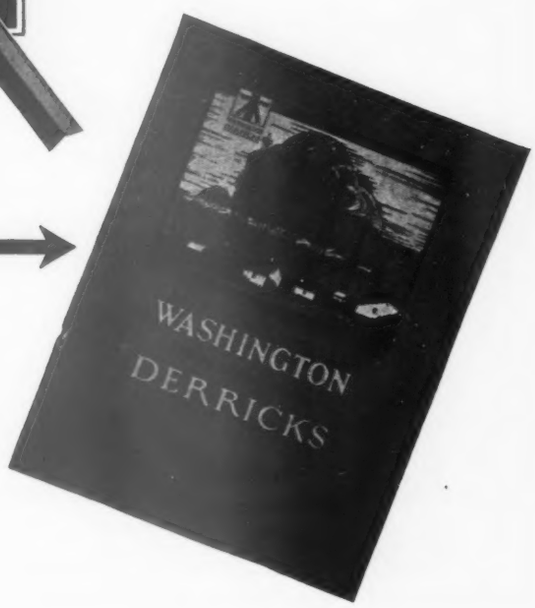
Alfred S. Olmstead, *Export Agent*

GRAND CENTRAL TERMINAL (Room 5733) TELEPHONE, VANDERBILT 5593 NEW YORK CITY

WASHINGTON DERRICKS



Have You Seen This?



This new catalogue is just fresh off the press. We would like to send you a copy if you are interested in buying or using structural steel derricks.

The O'Brien Steel Construction Co., Inc.

WASHINGTON, PENNSYLVANIA

Western Representative

Rig Equipment Company

1524 So. St. Louis Street, Tulsa, Okla.

NEWHALL CHAIN FORGE AND IRON COMPANY EXPANDS

The Newhall Chain Forge & Iron Company, 9-15 Park Place, New York, N. Y., has recently purchased the properties of the Rensselaer Chain Works at Rensselaer, New York, and also adjoining ground space for further extensions.

Rensselaer Chain shop is equipped particularly to manufacture hand made, heavy duty chains, and has for several years been under the exclusive operation of the Newhall company.

Newhall Chain Forge & Iron Company is one of the divisions of the Henry B. Newhall Corporation, Garwood, New Jersey.

The Gulf Coast Tank Company has recently been organized to handle Butler bolted steel tanks and portable steel buildings in the Gulf Coast territory, and has opened for business with an office and warehouse at 1612 Moffit Street, Houston. A stock of bolted steel tanks ranging from 60 to 15,000 barrels capacity will be carried.

Sheldon Machinery Corporation has announced the appointment of the Oil Well Supply Company and the Lucey Products Corporation to handle world-wide distribution on its entire line of equipment. Announcement is further made that Hughes Tool Company has been appointed to manufacture the Sheldon tool joints.

Birmingham Machine & Foundry Company and Joubert & Goslin Machine & Foundry Company, both of Birmingham, Alabama, have merged into the Goslin-Birmingham Manufacturing Company, Inc., which will specialize in the manufacture of sugarhouse and refining apparatus, filters, heavy chemical machinery, compresses and heavy machinery and gray iron castings. The combined facilities of the two adjacent plants now merged occupies 26 acres.

J. Goslin, formerly president of the Joubert & Goslin Company, is president of the new company, and George M. Morrow, Jr., formerly president of the Birmingham Machine & Foundry Company, will be vice-president. A New York office is maintained at 82 Beaver Street.

TYLER
BOILER TUBES

Inquiries Solicited

For All Oil Country
Tubular Requirements

THE TYLER TUBE
& PIPE CO.
Washington, Pa.

Texas Stock—Harrisburg Pipe and
Pipe Bending Co. of Texas, Inc.
Houston, Texas

Oklahoma Representative—Harrisburg Supply Co.,
Tulsa, Oklahoma

Waco, Texas.—The new plant here of the Atlas Portland Cement Company is in operation and has been constructed to supply the demand for the company's products in Texas, according to John R. Morron, president. The Waco unit of the Atlas properties embodies the latest in construction and equipment and the large mill has been completed in record time, actual construction having been started last October.

C. H. Boice is sales manager of the Atlas Portland Cement Company of Texas, and M. H. Hull is assistant manager of sales. Officers of the company are maintained in the Amicable Building here.

National Tank Company of Tulsa has recently issued a new illustrated catalog of their line of oil field equipment. Detailed information and data on National separators, air lift intermitters, flow tanks, stock tanks, welded tanks, bolted tanks, bulk station equipment and other products is given together with layouts of typical hook-ups in the field. Copies of the new catalog may be obtained by communicating with the company direct.

Reclamation Engineering Company, with R. J. Titley as general manager, has opened offices at 323 Mid-Continent Building, Tulsa.

This company is contractors for casing pulling and steel tankage erection, as well as dealers in steel storage, abandoned properties and oil well pipe and supplies.

The Thrift Hydraulic Pipe Pulling Machine will be used by the company. On pipe pulling jobs the company proposes to either contract to do the work and furnish the machines and operators, or lease the machine and operator, or sell the them itself.

SHOP NIGHT SCHOOL

A night school, where machinists, welders and other shop workers are to be informed of the new developments in the oil fields, has been started by Frank Mason, superintendent of the Shaffer Tool Works, Brea, California.

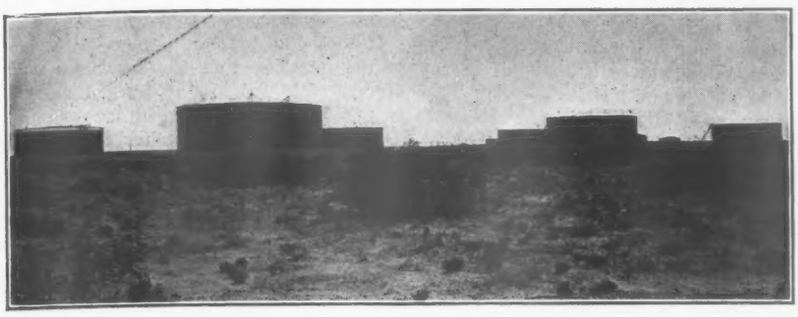
Deeper drilling, extreme gas and pump pressures, high speed drilling methods and new legal regulations governing operations and production, present many problems to shops furnishing oil field equipment, according to W. D. Shaffer, owner of plants in Brea, Ventura, Long Beach and Santa Fe Springs.

Additions to shop facilities, high pressure testing apparatus and more modern shop practices are continually being installed, but conditions in the field at the present time are making so many demands on the shop that it was considered necessary to form the night school to keep the shop force acquainted with the rapid developments.

New standards adopted by the American Petroleum Institute, casing and tubing programs in different fields, conditions and local preferences in various parts of the world where drilling is going on, heat treatment of steel and alloys, strength of materials, design of valves and casing heads, inspection and testing are listed by Mason as lesson-subjects.

NEW TULSA OFFICE

Youngstown Sheet & Tube Company has opened a new field office at 905 Exchange National Bank Building, Tulsa. J. A. Mussler, who spent a year with his company in Burma, Iraq and South America doing special work, and H. B. Duffield, who spent a year in South America, will jointly be in charge of the new office. Their past experience with Youngstown Sheet & Tube Company includes mill work at Youngstown and Indiana Harbor, points of manufacture of seamless and lap-welded casing, drill pipe, line pipe and tubing, as well as work in the field.



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Six Pittsburgh - DesMoines Standard 80,000 Barrel Tanks

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Into Springfield Trailers are built provisions for tightening and adjusting — which assures continuous satisfactory service indefinitely. Descriptive circular will be sent upon request.

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Distributors at Tulsa and Oklahoma City, Okla.; Dallas and San Antonio, Texas, Amarillo and El Paso, Texas; Little Rock, Ark., and Memphis, Tenn.

SPRINGFIELD TRAILERS

SPEED

of the
Appleman Gumbo
Bit drilling more hole
at less cost for big
companies every day

(Patent Applied For)

No Choking Up

Note that water courses lead direct to cutting edge. This design has accomplished a maximum cooling effect. The cuttings are rapidly broken up and washed away in solution thus obviating choking up.

Cutting Edges Self-Sharpening

A principle in the design is that the blades are formed concavely favoring cutting edges for both bottom and side of hole. Attained by hard facing, permitting wear on back to retain cutting edge. This factor contributes greatly to the speed of the Appleman Gumbo Bit.

CUTS COSTS

Frequently saves half the number of bits. 3 Appleman bits drill 3000 feet. Used half number of bits reaching 4700 feet.

Names of prominent users will be mailed upon written request.

Write for illustrated folder.

B.K.APPLEMAN

BEAUMONT, TEXAS

Squeaks from the Bull Wheel

A cowpuncher ordered a steak at a restaurant. The waiter brought it in—rare—very rare. The puncher looked at it and demanded that it be returned to the kitchen and cooked. "Tis cooked," snapped the waiter. "Cooked—hell," said our friend the puncher. "I've seen cows hurt worse than that get well."

Sunday School Teacher—"And why did Noah take two of each kind of animal into the ark?"

Bright Child—"Because he didn't believe the story about the stork."

Doctor (inquiring after boy who had swallowed a half dollar): "How is the boy today?"

Anxious Mother: No change yet.

An Irish policeman was taking an examination for promotion:

Q. "What is rabies, and what do you do about it?"

A. "Rabies is Jewish priests, and you can't do nothing about it."

"What is your idea of harmony?"

"A freckle-faced girl with a polka-dot dress, leading a giraffe."

The transatlantic flyer heard a rattle, which indicated that some nuts and bolts were shaking loose. A few minutes later he crossed over the border of Scotland and everything tightened up.

"He was acquitted," beamed the lawyer."

"Wonderful! On what grounds?"

"Insanity. I proved that his father had spent five years in a lunatic asylum."

"But he hadn't, had he?"

"Yes," said the barrister, "he was a doctor there; but I saw no need to bring that fact out."

What is your father's name, dear?

Daddy.

"Yes, dear. But what does your mother call him?"

"She don't call him anything. She likes him."

Business man: "Why did you leave your last position?"

Miss: "There was no future to it."

Business man: "Why."

Miss: "The boss was already married."

"And why did Andy McTavish get married?"

"Someone told him it was the woman who paid."

"And did you fill your date last night?"

"I hope so. She ate everything there was."

It took him a long time to get around to the question that she had been waiting patiently for him to ask. Finally he proposed, evidently failed to make himself quite clear, and so she inquired for details as follows:

"Now, just what do you want?—Trial? Companionate? Or fight to a finish?"

Rambling through the country general store he came across the first mirror he had ever seen.

"Say," he exclaimed, "here's a picture of my gran'pappy. How much do you want for it?"

"Three dollars," said the clerk.

The old man paid over the three dollars and started home with the mirror. Getting near, he decided he'd better not let the old lady find that he had paid so much for a picture of his gran'pappy, so he hid it in the hay-loft. Each day he would go down and spend long minutes with it.

Becoming worried about his long visits to the barn, the old lady followed the old man, and, at first opportunity, took a look into the mirror for her own self.

"Oh, yes!" she exclaimed, a few minutes later as she threw the flat-iron at the old man's head: "I see why you spend so much time at the barn—down there lookin' at that hussy's pitcher!"

"There" said the wife angrily, "I knew your new friend wasn't honest. One of our towels is missing."

"Was it a good one?"

"The best one we had. It was the one with Grand Palace Hotel on it."

"Boy, you'd better watch out or you'll lose control of this bus."

"You said it. I'm four payments behind right now."

"I hear that the dean of women is going to try to stop necking."

"I should think she would, a woman of her age."

"She seemed like a good, sensible girl."

"Yeh, she would't pay any attention to me either."

"Officer, stop that man."

"What fur?"

"Why, he's a bottlegger!"

"Don't yez get so excited, there'll be another one along in a minute."

"Was the party last night a good one?"

"It was great while I lasted."

He (to old maid): "The next time you bid no-trump, I'm going to take you out.

She (with titter): "Oh, Mr. Percyfeld! And there's such a heavenly moon, too."

"I want the life of Caesar."

"Sorry but Brutus beat you to it."

He can guess the time!

There's a farm laborer in a little town in Vermont who can guess the time within a minute or two at any minute of the day. It's a clever accomplishment—but the rest of us get along better with a watch.

Before Oil Country Gages were standardized some of the finer dimensions had apparently been guessed at. Compared with modern A.P.I. Gages they were somewhat crude instruments that might or might not be accurate.

When Pratt & Whitney made gages to A.P.I. specifications, they took all the guesswork out of gaging. There is now no need for ill-fitting couplings or any one of the troubles due to unstandardized and inaccurate gages.

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Hartford, Conn.
Division NILES-BEMENT-POND-COMPANY

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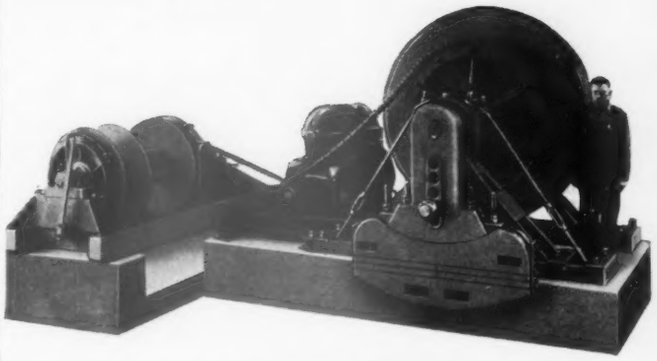

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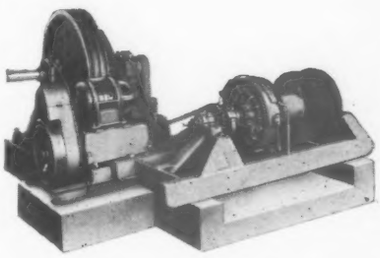

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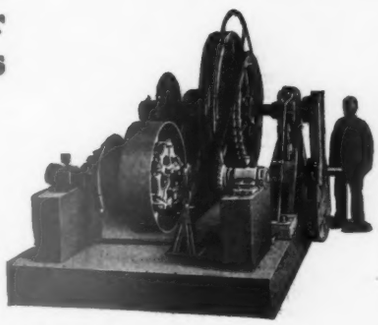
WITH
The O. C. S. Countershaft Reversing Clutch



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TULSA, OKLAHOMA
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The notable efficiency and endurance of this pump merit investigation by every man who is concerned with pump purchase or operation. Interchangeable liner fluid end gives capacities varying from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. per hour at 250 lbs. pressure. Arranged for gas engine or electric motor operation.

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for every oil industry need

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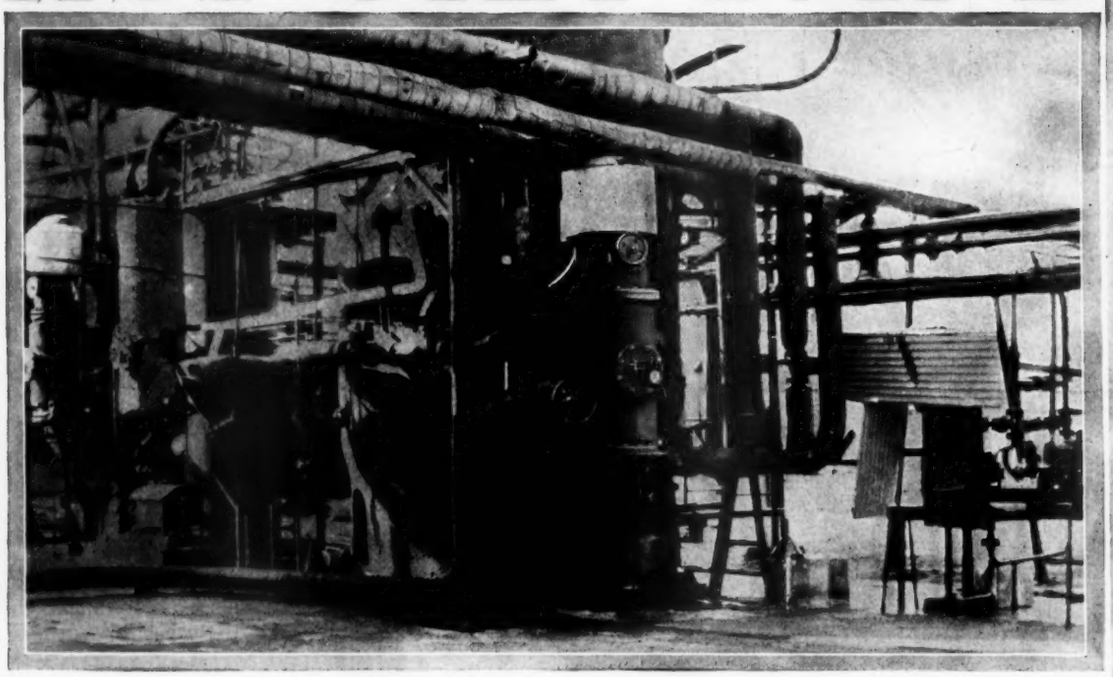

This scene in a Texas refinery shows two Byron Jackson Inverto Hot Oil Pumps with top drive. The one in the foreground is used in conjunction with a Stratford Fractionating Tower, and the one in the background, to the left, is connected to a Braun Cooler. Motors are protected from rain by sheet iron hoods. Just below the motor hood is the hand wheel, by means of which the packing gland is externally controlled. The pump is completely enclosed in a steel casing. The compactness and safety of this equipment is obvious. Byron Jackson manufactures not only special equipment for refineries but also centrifugal pumps for every conceivable service in the oil industry.

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Tnemec

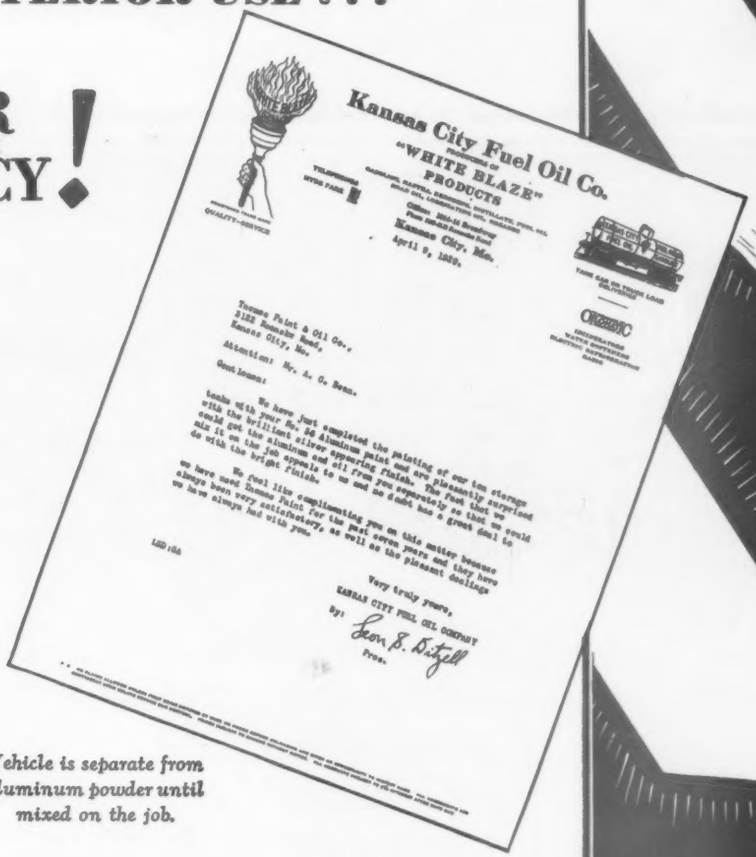
Formula No. 36

ALUMINUM PAINT

for EXTERIOR USE . . .

GREATER BRILLIANCY!

Convenient package permits mixing on the job!



Kansas City Fuel Oil Co.
"WHITE BLAZE"
PRODUCTS
Kansas City, Mo.
April 9, 1929.

Tnemec Paint & Oil Co.,
3122 Roanoke Road,
Kansas City, Mo.

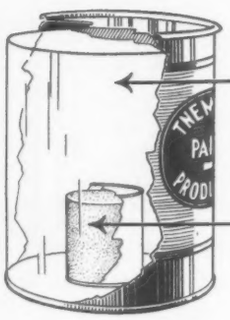
Attention: Mr. A. O. Bess.

Gentlemen:

We have just completed the painting of our tin storage tanks with your No. 36 Aluminum paint and are pleasantly surprised with the brilliant silver appearing finish. We trust that we could get the aluminum and oil from you separately so that we may do it on the job ourselves to us and as a result have a great deal to do with the bright finish.

We feel like complimenting you on this matter because we have used Tnemec Paint for the past seven years and they have always been very satisfactory, as well as the pleasant dealings we have always had with you.

Very truly yours,
KANSAS CITY FUEL OIL COMPANY
by: Leon B. Bitzell
Pres.



Vehicle is separate from aluminum powder until mixed on the job.

Aluminum bronze powder is kept in this air-tight metal can.

This paint is put up in specially constructed 5-gallon containers. When ready to start painting, remove cover of large pail, lift out smaller can, remove top and pour aluminum powder into the liquid. Stir together thoroughly, and the paint is ready to use.

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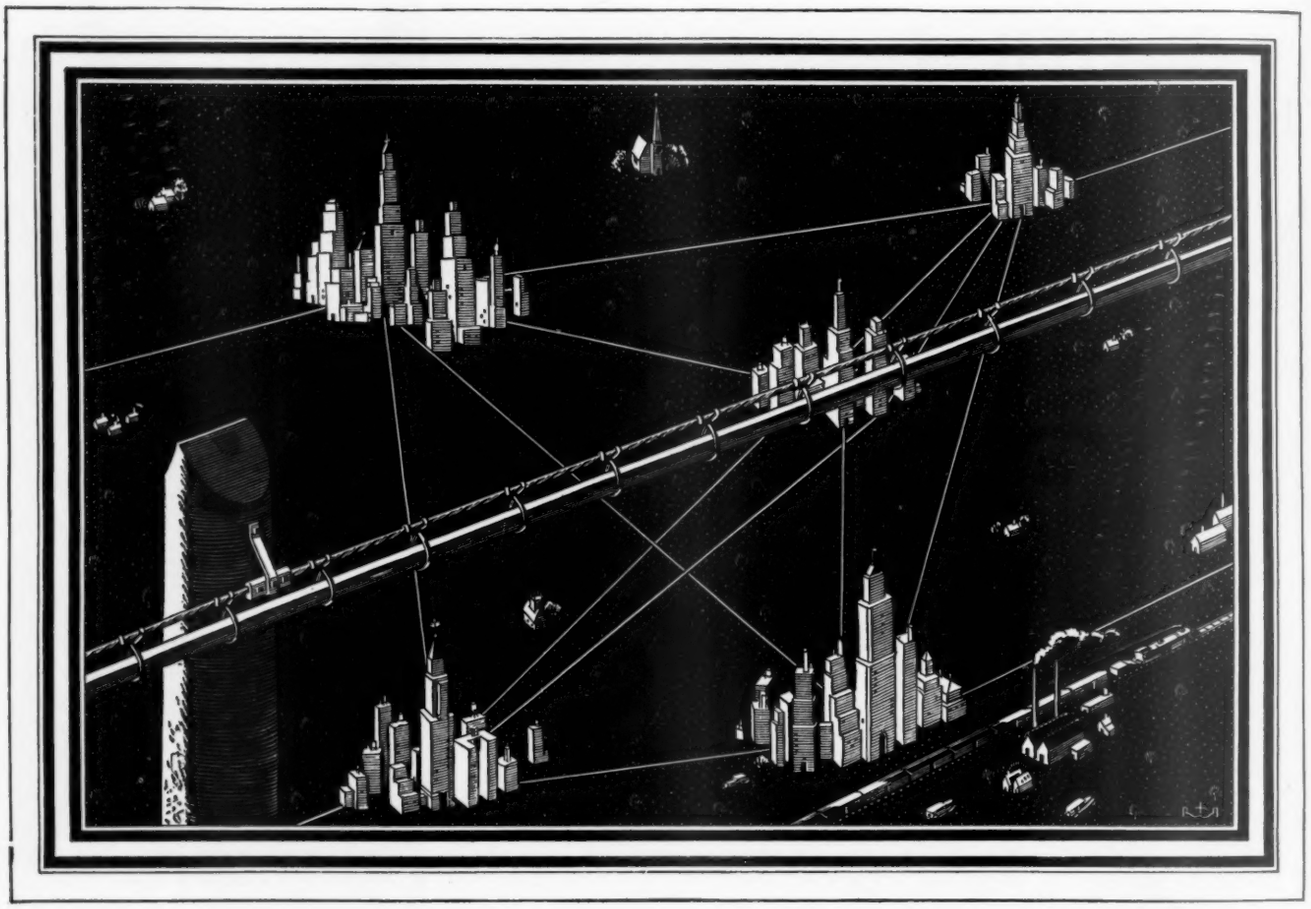
CONTINENTAL

How Easy it is to Telephone between Cities



WHETHER it is a call to the next block or to another city, the telephone instrument on your desk is always ready. And it is easy to use. On calls to nearby cities, the operator will usually get the wanted telephone while you hold the line.

The simple act of using the telephone is often more effective than a trip in person. The representative of a Richmond grain company traveled 100 miles several times to call personally on a buyer without success. Then he called him by telephone—and sold him a carload of wheat. Cost of the call, 70c.

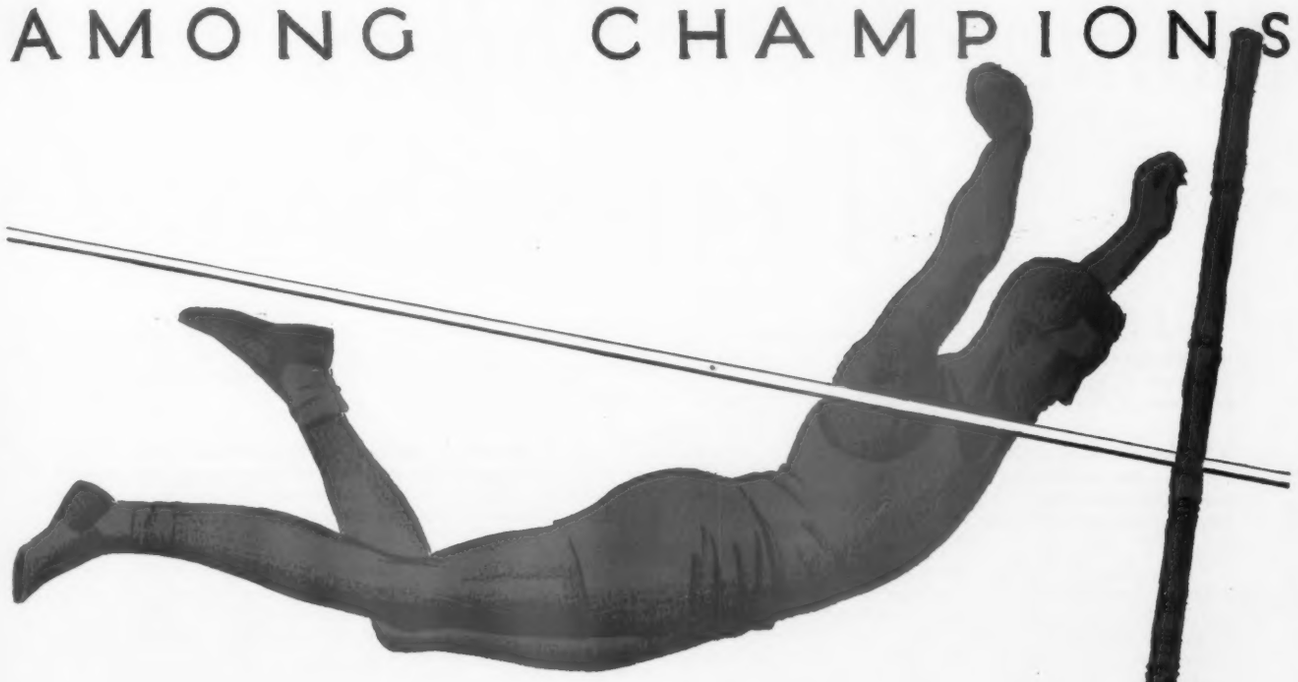
An Atlanta commission house started 10 carloads of potatoes across from Memphis. While the cars were rolling, 9 of them were sold by telephone in towns along the way. The last car was sold by telephone in Atlanta. Sales, $10,000. Cost of calls, $5.45.

The telephone habit is good for business men in every line. It is so convenient. What calls could you profitably make to other cities now?

Calling by number takes less time. Bell Telephone Service is *Convenient . . . . . Economical . . . . . Universal.*

AMERICAN TELEPHONE & TELEGRAPH CO AND ASSOCIATED COMPANIES BELL SYSTEM

AMONG CHAMPIONS



MOBILITY

Move! Move Quickly! Move Easily!

Whether a derrick is being erected or dismantled, the ease and rapidity with which the work can be done is an important thing. This feature of mobility is highly developed in the Moore Champion Derrick. It is the result of simplicity of design, interchangeable parts and accurate fabrication.

The Moore Champion Derrick conforms to A. P. I. standards.

THE Moore Champion DERRICK

LEE C. MOORE AND COMPANY, INC., PITTSBURGH · TULSA

ESTABLISHED 1907

New York Offices: Oilfield Equipment Company—30 Church St., New York, N. Y.

DALLAS, TEXAS · HOUSTON, TEXAS · WICHITA, KANSAS · PARKERSBURG, W. VA. · CASPER, WYO. · SHREVEPORT, LA.

Stocks in All Principal Fields

Some of the Things THEY SAY!

"This publication should fill the long felt want in any oil field office in which it finds its way" writes the Manager of the Foreign Division of the Producing Department of one of the world's biggest oil companies.

* * * *

"I regard your Composite Catalog as a very unusual volume and something that the industry has needed badly for some time"—Manager, Producing Department, large Louisiana operating Company.

* * * *

"This Catalog fulfills my wants very nicely. The index is very conveniently arranged and little time is lost in looking up different types of material. It is very useful in looking up information on equipment and I would almost consider it a text book on oil field equipment"—Vice President and General Manager one of America's largest gas companies.

* * * *

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* * * *

"This Catalog fills a long felt want and those who handle equipment must find it useful. Many thanks for same."—General Manager of large producing company in Wyoming.

* * * *

"In assembling the information contained in this Catalog you have rendered a service to the industry and I believe it will be of value to all who are fortunate enough to receive it."—Superintendent of large West Coast oil company.

* * * *

"It is one of the most complete Catalogs of oil field equipment gotten up by anyone and I am sure the superintendent feels as I do that if we want to find anything used in the oil field we have only to pick up your Catalog and it will be easily found."—Assistant Superintendent large operating company in the Gulf Coast.

"I keep this Catalog on my desk and believe it is one of the most useful of its kind I have ever seen." —Manager Production one of the largest oil companies on the West Coast.

* * * *

"It is greatly in demand throughout the offices of this corporation and the production department find it very valuable in their work."—Assistant Superintendent Pipe Line Department of the company above.

* * * *

"Your Composite Catalog will not only save me a great deal of time but will make available to me much data on equipment which I have not had in the past." —Signed, Technical Director a large oil company, operating in foreign fields.

* * * *

"Since the writer received his copy of the Catalog he has on several occasions referred to it and found the equipment properly illustrated and described and in his opinion this will be very useful and helpful to the purchasing department."—Purchasing Agent of large mid-continent oil company.

* * * *

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* * * *

"I have referred to this Catalog on a number of occasions and have looked through it and wish to compliment you on the manner in which it has been compiled." —Chief Engineer large mid-continent oil company.

* * * *

"It is very complete and the most interesting Catalog I have ever read. I am very sure it will be a most helpful Catalog to me in the future."—Producer in New York State.

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"I believe this Catalogue is going to be a very valuable book for the operating department."—Assistant General Superintendent of one of the mid-continent's largest pipe line companies.

More than 200 items described in the Composite Catalog are either new or improved design.

The Composite Catalog is not intended to take the place of oil paper advertising, or the big supply catalogs, but to supplement both, and to take the place of the numerous descriptive folders on various equipment.

It is fully illustrated, completely indexed. It is a big time and effort saver. Use it.

The Gulf Publishing Company

(Catalog Division)

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You'll make more profit because you can drill faster, safer; save many costly equipment replacements; reduce fuel and power consumption and drill a straighter well—all of which result in greater satisfaction. Fishing jobs are reduced because the entire drilling string and casing are protected against abrasion and destructive wear. There is no extra metal in the hole to add to a fishing job. If you are wild-catting, a large saving is made in transportation because fewer replacements are required and less fuel is needed. The total cost of the well will be far less.

Bettis Protectors are the original and genuine anti-friction rubbers, fully covered by patents. No seams, no hinges, no wire, no metal added to hole. Used in more than 95% of all deep wells now drilling. Ask for catalog.

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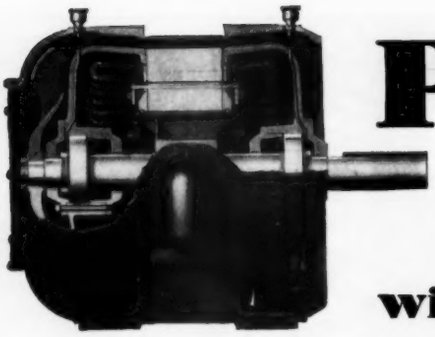
Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas, and New York City.



Permanent Protection

without sacrificing accessibility

. . . that was the thought in mind when the Allis-Chalmers type "ARZ" motor was developed. The active parts of this motor are completely enclosed, protecting the stator windings and the rotor — those parts that are subject to injury — from sulphurous gasses, acids, alkalis, dust, etc.

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LEAFLET 2109 tells about these and other standard Allis-Chalmers features. . . . *Write for a copy.*

ALLIS-CHALMERS MANUFACTURING COMPANY ▲ MILWAUKEE

Solid Beam Bracing
The lower, intermediate and top beams are rigidly braced, preventing the slightest distortion of any part of the assembly regardless of load applied.
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Both the beam assembly and the bearing construction offer the highest engineering development in rigidity and stability.
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An extra sheave may be added by simply moving over the three top beams and installing another beam to extra sheave.
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The four legs of the derrick carry an equal load because of the equal distribution of the load over the Crown beams.
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The large sheave separators are mounted on 2" pins instead of directly upon the top beams, permitting exact alignment.
THE RIGID REGAN CROWN BLOCK
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Meets the Deep Drilling Demands. Greater Speed. Longer Life.
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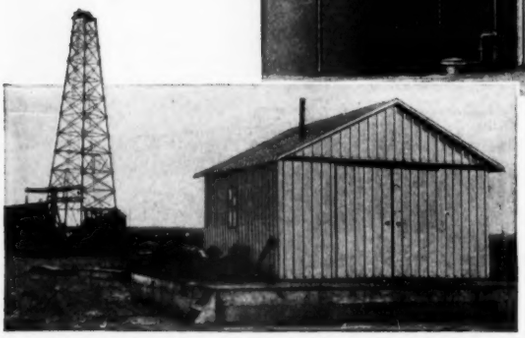
Steel Buildings for all OIL FIELD PURPOSES



REFINERIES, casing head plants, power plants, pumping units, tools, warehouse stocks, rig power units, motor cars and trucks, offices, families, oil field workers—all of these are sheltered in Butler Ready-Made Steel Buildings. They are almost universally adaptable to all oil field uses. Their fire resisting qualities offset the lack of full fire protection.

Available in Butler Ready-Made construction are such other features as completeness, economy of acquiring, economy in maintenance, speed in erection, finished appearance and structural qualities which make for permanence, yet which permit enlarging or taking down without loss of anything more than a few dropped bolts.

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BUTLER
READY-MADE
STEEL BUILDINGS

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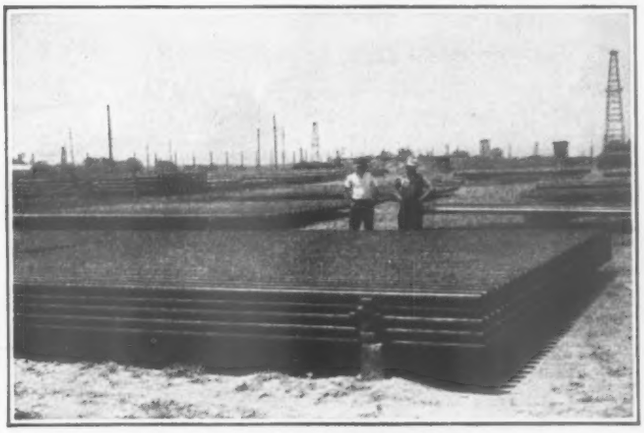

Ready for the Job at Bowlegs, Okla.
Reading Genuine Puddled Wrought Iron Pipe

47 Years
48 Years
57 Years
–Just a Few Oil Service Records Of Reading 5-Point Pipe!

Time shows some mighty convincing arguments for Reading 5-Point Tubing, Casing and Line Pipe. You'll find that the long service records shown above—taken from our files—are not at all unusual for this tough, corrosion-resisting, better-threading pipe.

Reading 5-Point Pipe is the only wrought iron pipe double welded. And it's made of Genuine Puddled Wrought Iron, puddled in the time-tested way to assure proved dependability. Look for the name "Reading" and the cut-in spiral knurl mark—these protect you from substitutes.

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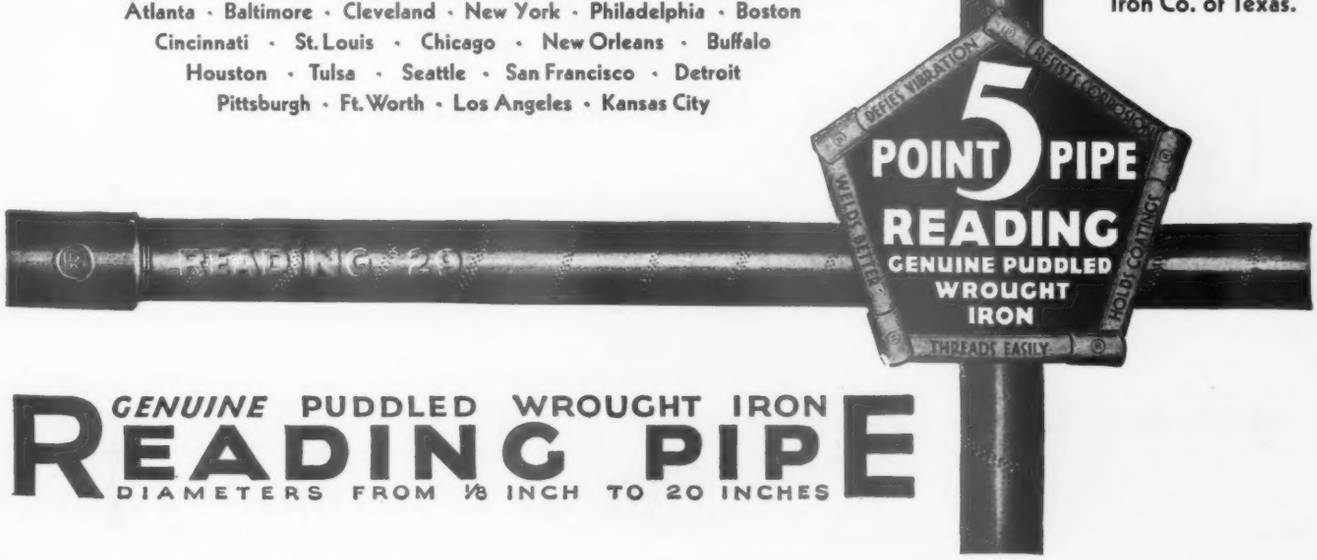
Reading pipe distributed by: Frick-Reid Supply Corp., Bradford Supply Co., Republic Supply Co., Superior Tube Co., Reading Iron Co. of Texas.



GENUINE PUDDLED WROUGHT IRON READING PIPE

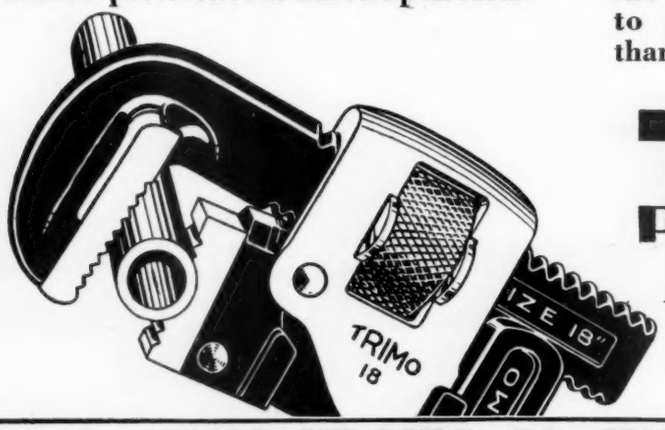
DIAMETERS FROM ⅛ INCH TO 20 INCHES

A Preference
Based Upon Facts

There are superstitions in the oil fields just the same as everywhere else, and likes and dislikes that cannot be reasonably explained . . . . . But the widespread faith of the oil fields in the TRIMO pipe wrench is more than either of these.

TRIMO preference is based upon facts— cold facts, as cold and as stubborn as the fine, tempered steel of a TRIMO itself.

TRIMO's tremendous strength, persistent grip, ability to stand years of service and abuse — these are the facts which make TRIMO predominate. These are the facts which make TRIMO's claim to greater safety and service more than a superstition or a selling line.



TRIMO
Pipe Wrench

ALL STEEL FOR STRENGTH

Replaceable Jaws for Lifetime Wear

Made by TRIMONT MFG. CO., INC., Roxbury (Boston), Mass.

Always easy to reline Axelson Pumps *because of* PERFECT INTERCHANGEABILITY

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

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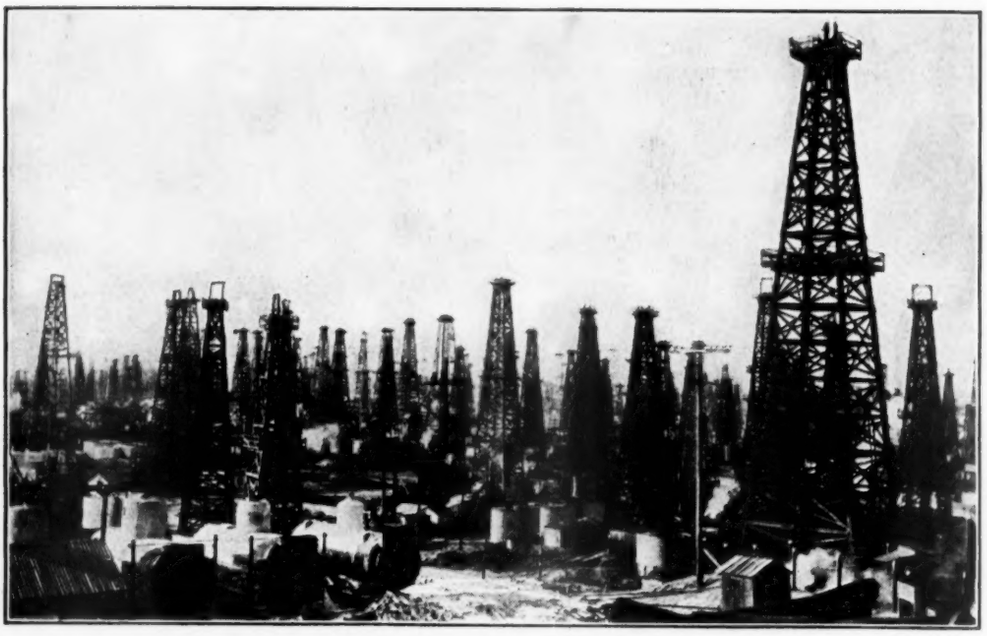

Photo shows Los Angeles basin field in Southern California. Many wells in this field, including the "discovery" well, are equipped with Goodrich Highflex belts

Because of its construction, this belt gives a *longer service life*

IN belts made the traditional way "internal conflict"—a structural weakness within the belt itself—shortens service life and acts as a bar to belting economy. The very construction of the belt sets up opposing forces. The folded edge is a permanent obstacle to complete flexibility—the insides of the belt work against each other. A moment's study of the panel opposite shows why this is.

The Goodrich Highflex belt, on the other hand, is built without folding the canvas. As a result each ply ends at the edge of the belt, and there is no "internal conflict" to prevent the free flexing of ply on ply. All parts of the belt will work in harmony.

That is why the Highflex principle has been hailed by engineers as one of the most important developments in the entire history of belt construction. That is why Highflex belts are piling up astonishing service records under the trying conditions met with in the oil industry. In one oil pumping operation an engineer reports "that Highflex belts give him 10 months against service of 2 to 8 months of previous belts."

You Can Prove the Highflex Principle this easy way

Fig. 1 **Fig. 2**

Bend a pad of paper or booklet with the fingers. When viewed from the edge (fig. 1) it assumes a natural uniform curve because of the unhampered action of the plies. Now, if several layers of paper are folded and then bent (fig. 2), you instantly see how the fold distorts the curve and impedes the free movement of the individual layers.

Because of their unique construction principle Highflex belts have no seams to open up, and can be used with either side to the pulley. They eliminate bootlegging, are unaffected by temperature changes, and have excess stretch removed during the process of manufacture.

We will gladly send additional information. Write to The B. F. Goodrich Rubber Company, Akron, O. Established 1870 (In the West, Pacific Goodrich Rubber Co., Los Angeles Cal.) or the branch nearest you (see list below).

Oil Field Branches

Pacific Goodrich Rubber Co.:

1386 East 7th St., Los Angeles, Cal.
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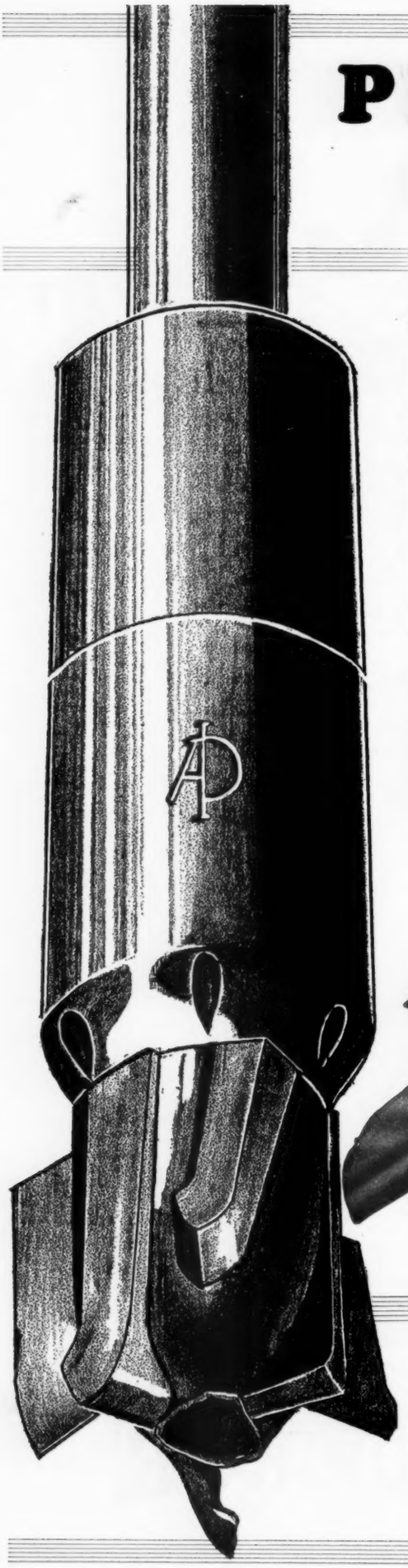
Goodrich

ACHIEVEMENT
The EMSCO AIRCRAFT CORPORATION is but a logical and forward step in rounding out the world-wide chain of EMSCO industrial and commercial activity.
First unit of Downey, California, factory with 40,000 square feet floor space and 75-acre private airport now in operation, to manufacture a complete line of aircraft to meet all requirements—land and sea.
EMSCO AIRCRAFT CORP.
EMSCO
AIRCRAFT CORPORATION
DOWNEY
U.S.A.
TRADE MARK
CALIFORNIA

PERFECTION Core Barrel

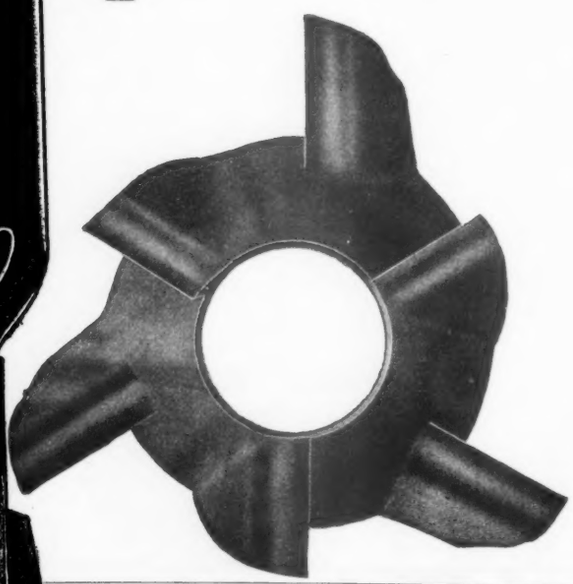


The Split Liner allows you to remove the core in *two minutes*—clean and unbroken. Unscrew the cutter head, take out the Split Liner . . and that's all.

Cutter Head is made *of heat treated* Chrome Nickel Steel, faced with Stellite. You can always depend on it to take the core you want. Ask about our convenient and economical cutter head exchange plan.

A Clean Core is always assured as water circulates through the barrel until it reaches bottom. Then a ball dropped through the drill stem cuts off the water from the barrel.

Ask about other Brewster A. P. I. Products:
Shouldered Tool Joints; Drill Collars; Fish Tail and Special Gumbo Bits; Special Rock Bits.



Major Companies . . . . more than 50% of the largest oil companies of America have bought Perfection Core Barrels within a year. "Such popularity must be deserved."

The Brewster COMPANY~INC.
SUCCESSORS TO OIL CITY IRON WORKS INC.
Shreveport, Louisiana

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